MZ-R2

SERVICE MANUAL

Ver 1.0 2001.05
With SUPPLEMENT-1
(9-959-214-89)
With SUPPLEMENT-2
(9-959-799-81)

SONY
MD WALKMAN
PORTABLE MINIDISC RECORDER MZ-R2
DISPLAY
PLAY MODE
VOL

US Model
Canadian Model
AEP Model
UK Model
E Model
Australian Model
Tourist Model

Model Name Using Similer Mechanism	NEW
Mechanism Type	MT-MZR2-109
Optical Pick-up Type	KMS-190A

SPECIFICATIONS

System

Audio playing system
MiniDisc digital audio system
Laser diode properties
Material: GaAlAs
Wavelength: λ = 780 nm
Emission duration: continuous
Laser output: less than 44.6 µW
(This output is the value measured at a distance of 200 mm from the lens surface on the optical pick-up block.)
Revolutions
400 rpm to 900 rpm (CLV)
Error correction
Advanced Cross Interleave Reed Solomon Code (ACIRC)
Sampling frequency
44.1 kHz
Coding Adaptive TRansform Acoustic Coding (ATRAC)
Modulation system
EFM (Eight to Fourteen Modulation)
Number of channels
2 stereo channels
Frequency response
20 to 20,000 Hz ± 1 dB
Wow and Flutter
Below measurable limit

Inputs

	Jack Type	Rated Input	Minimum Input
Microphone	Stereo mini-jack	0.78 mV	0.22 mV
Line In	Stereo mini-jack	194 mV	69 mV

Outputs

	Jack Type	Rated Output	Maximum Output Level	Load Impedance
Headphones	Stereo mini-jack	—	5 mW + 5 mW	16 ohm
Line Out	Stereo mini-jack	194 mV	—	10 kilohm

General

Power requirements
- LIP-12 Rechargeable Battery (Lithium-ion Battery Pack, supplied)
- Three R6 (size AA) batteries (not supplied)
- Sony AC Power Adaptor (supplied) connected at the DC IN 6V jack:
  220–230 V AC, 50/60 Hz (AEP model)
  120 V AC, 60 Hz (US, Canadian model)
  240 V AC, 50Hz (UK, Austrarian model)
  100–240 V AC, 50/60 Hz (E, Tourist model)

Battery operation time
120 minutes of consecutive recording with fully charged LIP-12
150 minutes of consecutive playback with fully charged LIP-12
Dimensions
Approx. 84 × 29.9 × 106.8 mm (w/h/d) (3 3/8 × 1 3/16 × 4 1/4 in.)
Mass Approx. 310 g (10.9 oz) incl. rechargeable battery

— **Continued on next page** —

PORTABLE MINIDISC RECORDER

9-959-214-12
2001E0200-1
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Sony Corporation
Personal Audio Company
Shinagawa Tec Service Manual Production Group

SONY®

Accessories

Optional
- LIP-12 Lithium-ion Battery Pack
- ACP-MZ60A AC Power Adaptor/Battery Charger
- POC-MZ1, POC-MZ2 Optical Cable
- CPM-MZR2K Car Mount Kit
- CPA-8 Car Connecting Pack
- ECM-909A, ECM-727P Stereo Microphones
- MDR-D55, MDR-D77 Stereo Headphones
- SRS-58 Sony Active Speakers
- Recordable MDs: MDW-60, MDW-74
- CK-MD4 MiniDisc Carrying Case
- CK-MD10 MiniDisc Filing Box

Your dealer may not handle some of the above listed accessories. Please ask the dealer for detailed information about the accessories in your country.

US and foreign patents licensed from Dolby Laboratories Licensing Corporation.

Design and specifications are subject to change without notice.

Note
This appliance conforms with EEC Directive 89/336/EEC regarding interference suppression.

For Customers in Europe

CLASS 1 LASER PRODUCT
LUOKAN 1 LASERLAITE
KLASS 1 LASERAPPARAT

This MiniDisc Recorder is classified as a CLASS 1 LASER product.
The CLASS 1 LASER PRODUCT label is located on the bottom exterior.

For Customers in Canada
This apparatus complies with the Class B limits for radio noise emissions set out in Radio Interference Regulations.

For Customers in the United Kingdom

CLASS 1 LASER PRODUCT
LUOKAN 1 LASERLAITE
KLASS 1 LASERAPPARAT

This MiniDisc Recorder is classified as a CLASS 1 LASER product.
The CLASS 1 LASER PRODUCT label is located on the bottom exterior.

The built-in battery should be replaced by qualified personnel only.

For Customers in Australia
If the supply cord of AC power adaptor is damaged the AC power adaptor must be returned to the manufacturer or his agent for the cord to be replaced.

IN NO EVENT SHALL SELLER BE LIABLE FOR ANY DIRECT, INCIDENTAL OR CONSEQUENTIAL DAMAGES OF ANY NATURE, OR LOSSES OR EXPENSES RESULTING FROM ANY DEFFECTIVE PRODUCT OR THE USE OF ANY PRODUCT.

"MD WALKMAN" is a trademark of Sony Corporation.

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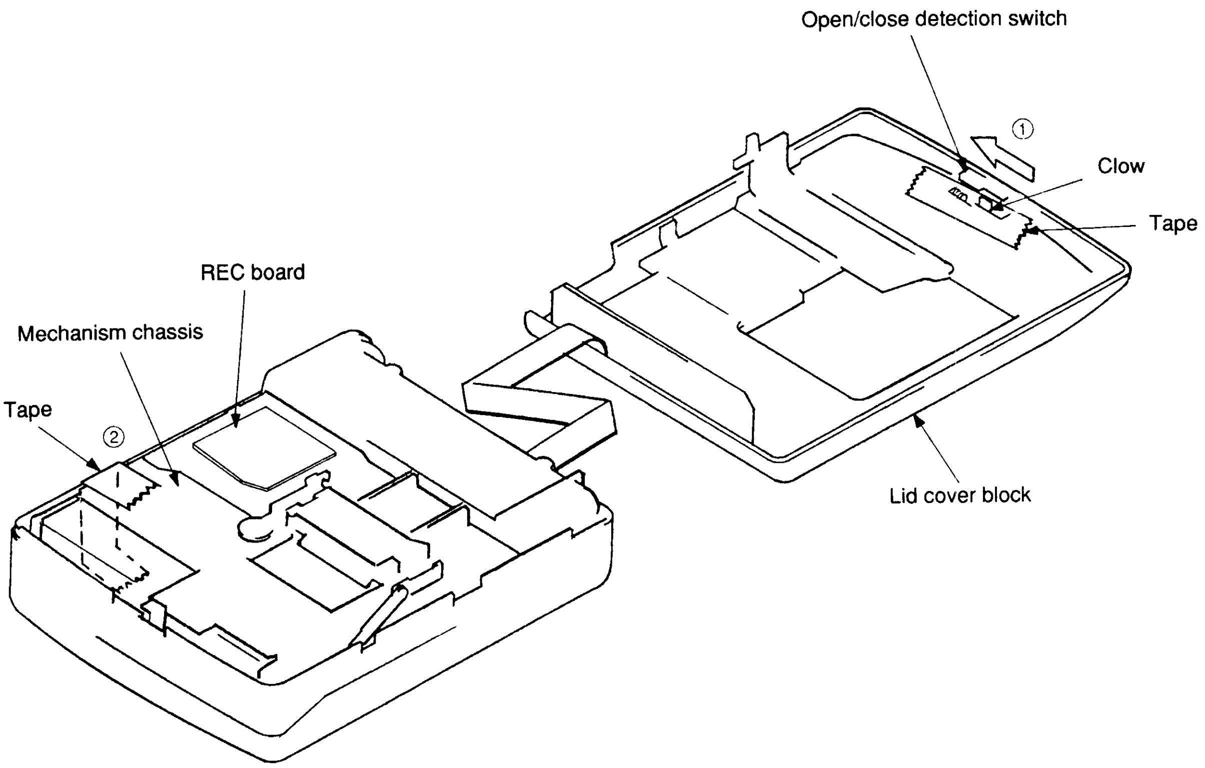
SECTION 1

SERVICING NOTE

Open the cover assembly when measuring the REC board, etc. This will prevent the unit from operating.

① Secure the open/close detection switch claw with tape in the direction of the arrow.

② Secure the mechanism chassis with tape so that it does not move.



Notes on chip component replacement

- Never reuse a disconnected chip component.
- Notice that the minus side of a tantalum capacitor may be damaged by heat.

Fiexible Circuit Board Repairing

- Keep the temperature of the soldering iron around 270 °C during repairing.
- Do not touch the soldering iron on the same conductor of the circuit board (within 3 times).
- Be careful not to apply force on the conductor when soldering or unsoldering.

SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY MARK ⚠ OR DOTTED LINE WITH MARK ⚠ ON THE SCHEMATIC DIAGRAMS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

ATTENTION AU COMPOSANT AYANT RAPPORT À LA SÉCURITÉ!

LES COMPOSANTS IDENTIFIÉS PAR UNE MARQUE ⚠ SUR LES DIAGRAMMES SCHÉMATIQUES ET LA LISTE DES PIÈCES SONT CRITIQUES POUR LA SÉCURITÉ DE FONCTIONNEMENT. NE REMPLACER CES COMPOSANTS QUE PAR DES PIÈCES SONY DONT LES NUMÉROS SONT DONNÉS DANS CE MANUEL OU DANS LES SUPPLÉMENTS PUBLIÉS PAR SONY.

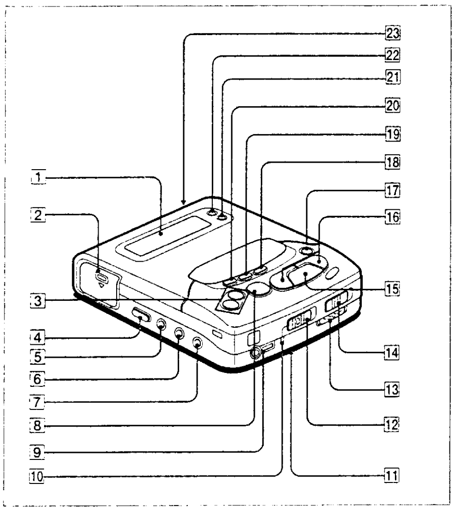
SECTION 2
GENERAL

This section is extracted from instruction manual.

Looking at the controls

See pages in ( ) for more details.

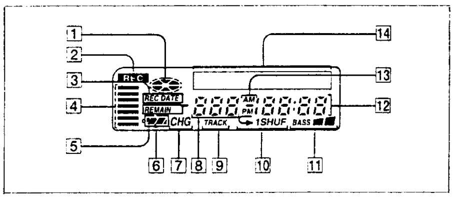
The recorder



1 Display window (43, 64)
2 Rechargeable battery compartment (11)
3 VOL(volume) +/– buttons (14, 36)
4 BASS BOOST (41)
Select to emphasize low frequency (bass) sounds.
5 LINE OUT jack (49)
6 OPT(optical)/LINE IN jack (7, 16, 17)
7 MIC PLUG IN POWER jack (30)
8 ■ (stop) button (8, 9, 37)
9 🎧 (headphones)/REMOTE jack (9, 22, 34, 36, 50)
10 Record indicator (28, 33)
11 CLOCK SET (14)
Press here with a pen nib to set the clock.
12 REC (record) (8, 20, 22, 25, 27, 30)
13 HOLD (40)
Slide to lock the controls of the recorder.
14 OPEN (8, 20, 21, 24, 26, 37)
Slide here to open the lid and insert or remove an MD.
15 ► (play) button (9, 22, 36)
16 ⏮/⏭ (search, AMS) buttons (14, 22, 35, 37)
17 ❚❚ (pause) button (20, 22, 24, 25, 26, 30, 37, 46)
18 ERASE (48)
Press to erase the recorded tracks.
19 END SEARCH (25)
Press to search for the end of recording.
20 TRACK MARK (34, 44, 46)
Press to add or erase track marks on a recording.
21 PLAY MODE (39)
Each time you press here the recorder plays the MD in different play modes: normal play, all repeat, single repeat, or shuffle repeat.
22 DISPLAY (42)
Press to display the current play mode, the remaining time of the current track, the remaining time of the disc, or the date and time recorded.
23 DC IN 6 V jack (7, 10, 11, 50)
Connect the supplied AC power adaptor here.

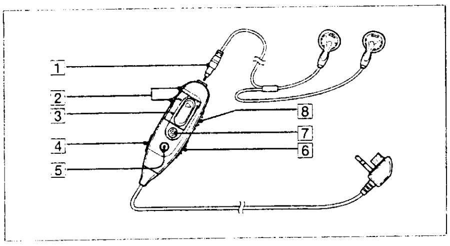
⇨Looking at the controls

The display window



1 Disc indication
Shows that the MD is rotating for recording, playing or editing.
2 REC(record) indication (21, 23, 26, 31, 32, 34)
Lights up while recording. When it is flashing, the recorder is in recording standby mode.
3 REC DATE (recorded date) indication (14, 43)
Lights up along with the date and time the MD was recorded. When only "DATE" lights up, the current date and time are displayed.
4 Level meter (32)
Shows the volume of the MD being played or recorded.
5 REMAIN(remaining time) indication (20, 22, 31, 36, 43)
Lights up along with the remaining number of tracks or remaining time of the track or the MD.
6 Battery indication (11, 13)
Shows battery condition.
7 CHG(charging) indication (11)
Lights up while the rechargeable battery is charged.
8 Track number indication (20, 21, 43)
9 TRACK indication (43)
Lights up along with the track number and elapsed time indications.
10 Play mode indication (39)
Shows the play modes of the MD.
11 BASS BOOST indication (41)
Lights up when low frequency (bass) sound is emphasized.
12 Time display (14, 20, 43)
Shows the time recorded and the current time.
13 AM/PM indication (14, 15)
Lights up along with the time indication in 12-hour system.
14 Character information display (14, 20, 21, 34, 36, 43)
Displays the disc and track names, date, error messages, etc.

The remote controller



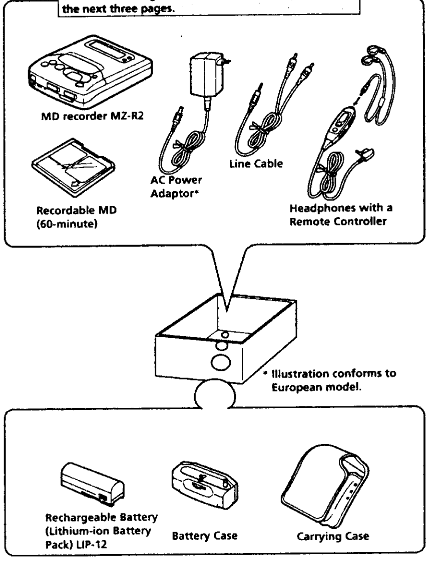
1. **Microplug (6)**
2. **VOL(volume) +/– buttons (36)**
3. **▶ (play)/⏮/⏭ (search, AMS) button (37)**
   While the recorder isn't operating, press ▶ to play. While playing, press the ⏮ side to find the beginning of the current or preceding tracks or search backward, or press the ⏭ side to find the beginning of the succeeding tracks or search forward.
4. **TRACK MARK (34, 44)**
   Press to add track marks while recording.
5. **❚❚ (pause) button (37)**
6. **AVLS (Automatic Volume Limiter System) (42)**
   Slide to ON to limit the maximum volume.
7. **■ (stop) button (37)**
8. **HOLD (40)**
   Slide to lock the controls of the remote controller.

Let's Start!

Start recording a MiniDisc (MD) from a CD and play it using your MD recorder and the supplied accessories.

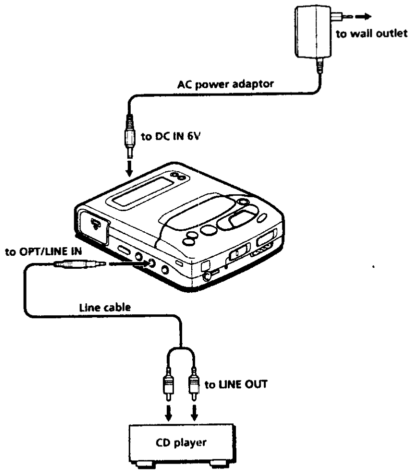
Unpacking

Use the following accessories to start the operation on the next three pages.


MD recorder MZ-R2
AC Power Adaptor*
Line Cable
Headphones with a Remote Controller
Recordable MD (60-minute)
Rechargeable Battery (Lithium-ion Battery Pack) LIP-12
Battery Case
Carrying Case

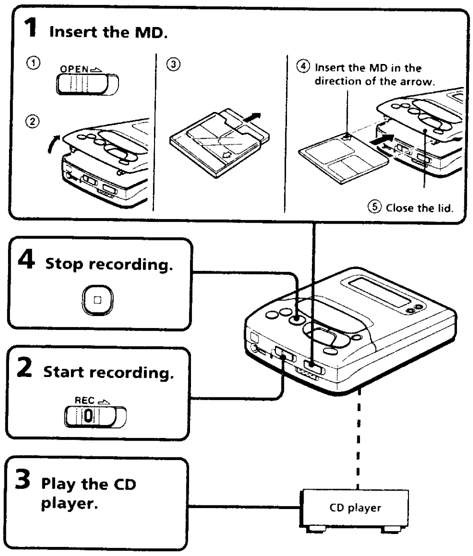
* Illustration conforms to European model.

Connecting to a CD player


to wall outlet
AC power adaptor
to DC IN 6V
to OPT/LINE IN
Line cable
to LINE OUT
CD player

To hook up a digital sound source (for example, another MD player, CD player or digital amplifier) —page 16
To hook up an analog sound source with stereo-mini type line out jacks —page 17

Recording an MD



1 Insert the MD.

①

②

③

④ Insert the MD in the direction of the arrow.

⑤ Close the lid.

2 Start recording.

3 Play the CD player.

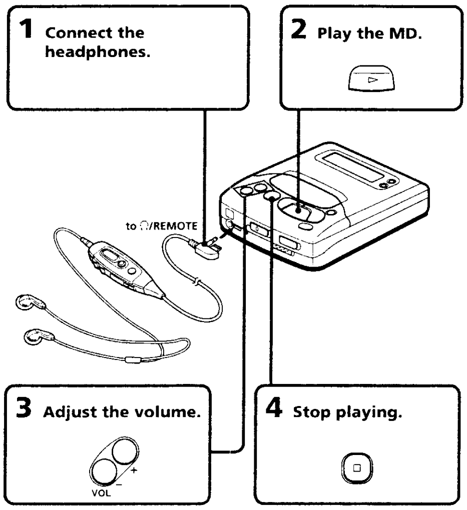
4 Stop recording.

☞ To start recording precisely

While holding down the **II** (pause) button, slide the REC switch to the right. Play the source. When the source comes to the part you want to record, press **II** again.

Listening to an MD

Play the MD you have just recorded.



1 Connect the headphones.

2 Play the MD.

3 Adjust the volume.

4 Stop playing.

☞

- After you stopped recording, press ►. The recorder will play from the point where you started recording.
- When you have stopped playing the MD partway through, press ► to resume playing from the point where the MD stopped.
- If you have opened the lid or taken the MD out after you stopped playing it partway, the recorder will play from the first track when you press ►.

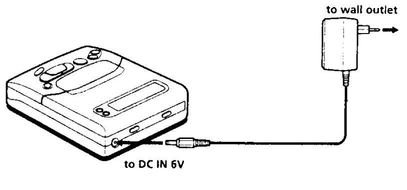
Choosing power sources

The recorder is operable on AC, rechargeable battery, and dry battery power.

Using on AC power

To record for hours, you should operate the recorder on AC power. If you use the rechargeable battery or dry batteries, the batteries may weaken and interrupt the recording.

Connect the supplied AC power adaptor to the DC IN 6V jack of the recorder and the wall outlet.



☞ After using, leave the recorder connected to the AC power for about 24 hours to charge the built-in battery for the clock and the recorder's memory.

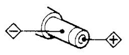
The built-in battery operates the clock and powers the recorder's memory. It requires charging when you use the recorder for the first time or after a long period of disuse.

The recorder will automatically charge the built-in battery while connected to AC power, rechargeable battery, or dry batteries. Once charged, the built-in battery should last about 2 months without connecting to any of the power sources.

Note on the AC power adaptor

Use the supplied AC power adaptor only. Do not use any other AC power adaptor.

Polarity of the plug

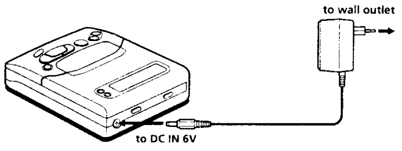


Using on the rechargeable battery

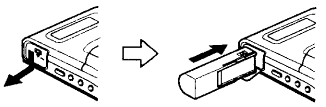
Before using the supplied rechargeable battery for the first time, you must charge it.

The battery can be recharged about 300 times.

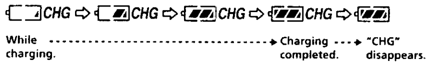
1 Connect the supplied AC power adaptor.



2 Open the battery compartment lid and insert the battery.



"CHG" and the battery indication appear in the display and charging begins.



Charging a completely discharged battery takes:
about 3 hours for 80% charging, or
about 5 hours for 100% charging.

3 Disconnect the AC power adaptor.

As long as the recorder is connected to the AC power, the power will be supplied from AC.

Notes on recharging

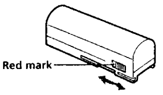
- Be sure to use the supplied AC power adaptor.
- When you use the battery for the first time or after a long period of disuse, the battery life may be diminished. In this case, charge and discharge the battery several times. The battery life will be restored.

Notes on the rechargeable battery

- To charge the battery, use only the recorder or the specified charger.
- Do not disassemble or short-circuit the battery.
- Do not leave the battery at high temperature for an extended period of time.
- Keep the battery away from the fire.
- Do not expose the battery to water.
- Do not drop the battery or subject it to mechanical schock.

☞ Battery charging tips

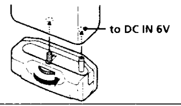
- **You can charge the battery at any time.**
  The rechargeable battery does not need discharging before recharging. You can recharge a half-charged battery. However, the rechargeable battery discharges little by little even while it is not in use. We recommend that you charge it before every use.
- **Keep a few spare batteries.**
  To avoid power shortage, prepare a few rechargeable batteries LIP-12 (not supplied). To remind yourself of the battery's condition, set the switch on the battery to the position where no mark is visible when the battery has finished charging. Set the switch to the position where the red mark is visible when the battery has been discharged.



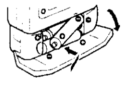
- **To ensure the maximum number of chargings and dischargings,** we recommend storing the battery in a cool place and charging it under temperatures ranging from 50° to 86°F (10° to 30°C).
  When the battery is not to be used for a long time, be sure to remove it from the recorder.

Using on dry batteries

1 Mount the battery case.



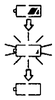
2 Install three R6 (size AA) alkaline batteries.



After you install a battery in the lower compartment, put the black tape, and install another battery on it. And then, install the other battery as illustrated.

☞ When to replace the batteries

You can check the battery condition with the battery indication displayed while using the recorder.



Used batteries

Weak batteries. Replace all the batteries.

The batteries have gone out. "LOW BATT" flashes in the display, and the power goes off.

- Battery life

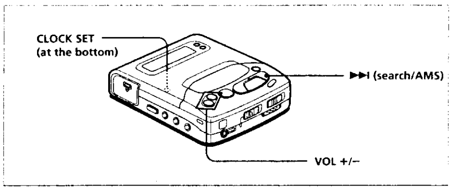
Batteries	Recording*	Playback
Rechargeable battery**	Approx. 2 hours	Approx. 2.5 hours
R6 (size AA) alkaline batteries	Approx. 2 hours	Approx. 2.5 hours
Rechargeable and R6 (size AA) batteries	Approx. 4.5 hours	Approx. 6.5 hours

* When you record, use a fully charged battery or new dry batteries.

** If the rechargeable battery capacity becomes half the normal life, replace it with a new one.

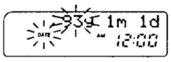
Setting the clock

To stamp the date and time on the MD when you record, you need to set the time. When you use the recorder for the first time or after a long time of disuse, charge the built-in battery for the clock and the recorder's memory before setting the clock (See *Using on AC power,* page 10.) Set the clock while the recorder isn't operating after connecting to the power source.



1 Press CLOCK SET at the bottom of the recorder with a pen nib.

The digits of the year flash.

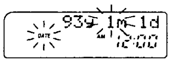


2 Enter the current year by pressing VOL + or –.

To change the digits rapidly, keep pressing + or –.

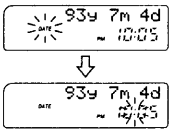
3 Press ▶▶I.

The year you set is stored in memory and the digit of the month flashes.



4 Repeating steps 2 and 3, enter the current month, date, hour, and minute.

The time display appears with "AM" or "PM". ("AM 12:00" means midnight and "PM 12:00" means noon.)
When you press ▶▶I to set the minute, the clock starts operating.



If you make a mistake while setting the clock

Press ■, and set the clock again from step **1**.

☞ On the clock display

- **To display the time**
  Press DISPLAY twice in stop mode. The time indication disappears after 5 seconds.

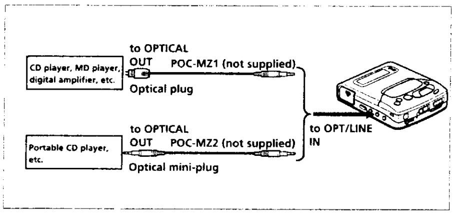
- **If the clock loses time or the display flashes**
  The built-in battery is weak. If you keep using the weak battery, the recorder will not record the recorded date and time. Note that the built-in clock normally loses about 2 minutes a month.

- **To display the time in the 24-hour system**
  While setting the clock, press DISPLAY. To display the time in the 12-hour system, press DISPLAY again.

Recording from a CD, etc.

When you connect the MD recorder to a sound source, the recorder automatically recognizes the sound source and switches to digital or analog recording.

Hooking up a digital source


to OPTICAL
OUT
POC-MZ1 (not supplied)
CD player, MD player, digital amplifier, etc.
Optical plug
to OPTICAL
OUT
POC-MZ2 (not supplied)
Portable CD player, etc.
Optical mini-plug
to OPT/LINE IN

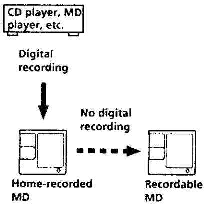
Connect the optical cable (POC-MZ1 or POC-MZ2, not supplied) to the OPT/LINE IN jack.

The recorder switches to digital input automatically.

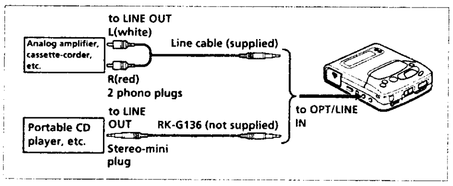
Notes

- The MD recorder's sampling frequency is 44.1 kHz. A digital source which has a different sampling frequency (such as the DAT recorder/ player) cannot be recorded using the digital connection. Use instead the analog (line out) connection (see the next section).
- You can make a digital recording only from an optical type output.

- If you use the digital (optical out) connection to record your MD, you will not be able to make copies from the recorded disc copy. You can only make copies from a home-recorded MD by using the analog (line out) connection.


CD player, MD player, etc.
Digital recording
No digital recording
Home-recorded MD
Recordable MD

Hooking up an analog source


to LINE OUT
L(white)
Line cable (supplied)
Analog amplifier, cassette-corder, etc.
R(red)
2 phono plugs
to LINE
OUT
RK-G136 (not supplied)
Portable CD player, etc.
Stereo-mini plug
to OPT/LINE IN

Connect the supplied line cable (or RK-G136, not supplied) to the OPT/LINE IN jack.

The recorder switches to analog input automatically.

Note

If a microphone is connected, the recorder will not switch to analog input. To record from the analog source, you must first disconnect the microphone.

When the recorder has different sound sources connected at the same time

The recorder switches to digital, microphone, and analog source in this order of priority.

Three ways of recording

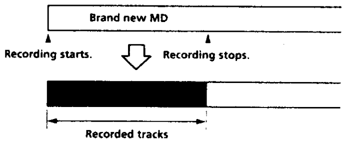
You can record an MD in three ways according to the points where the recording should start on the MD.

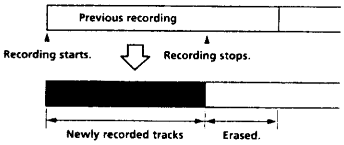
●Recording from the first track of an MD (page 20)

When recording on a brand new MD, recording starts from the first track of the MD. To record over a previous recording to be erased entirely, recording should also start from the first track of the MD.

Note that all the tracks will be erased as soon as you start recording.

Even if the previous recording is longer than the new tracks you are going to record, all of the previous recording will be erased.

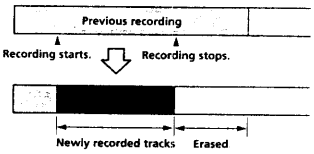

Brand new MD
Recording starts.
Recording stops.
Recorded tracks


Previous recording
Recording starts.
Recording stops.
Newly recorded tracks
Erased.

●Recording from a specific point of a previous recording (page 22)

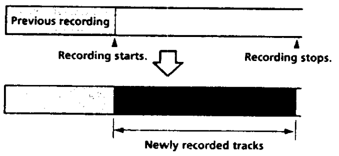
To keep a part of a recorded MD and record over the remaining previous recording, start recording at the end of the part you want to keep (at the beginning of the part you want to erase).

Note that all the succeeding tracks will be erased as soon as you start recording.


Previous recording
Recording starts.
Recording stops.
Newly recorded tracks
Erased

●Recording on the blank portion of a recorded MD (page 25)

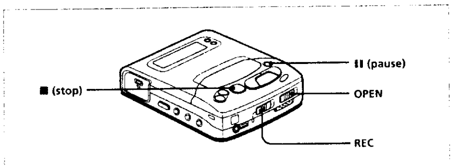
To keep all of the previous recording and record new tracks on the blank portion of the MD, start recording from the last point of the previous recording.


Previous recording
Recording starts.
Recording stops.
Newly recorded tracks

⇨Recording from a CD, etc.

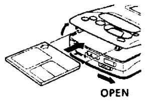
Recording from the first track of an MD

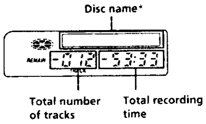
Before you start recording, connect the MD recorder to a sound source. When you record on the first track of a used MD, **note that all the succeeding tracks will be erased as soon as you start recording.**


■ (stop)
II (pause)
OPEN
REC

1 Insert the recordable MD.

Slide OPEN to open the lid, insert the recordable MD with the arrow pointing toward the opening, and close the lid.
Once you open the lid, the recorder will start recording from the beginning of the first track.



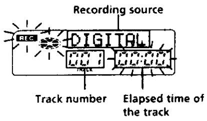

Disc name*
Total number of tracks
Total recording time

* No indication appears with MDs that have not been electronically labeled.

2 While holding down II, slide REC to the right pressing the red button in the center of REC.

"REC" flashes in the display and the recorder enters recording standby mode.

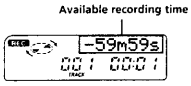
Note
When you record over a previous recording, all the succeeding tracks will be erased as soon as you start recording.


Recording source
DIGITAL
Track number
Elapsed time of the track

3 Play the sound source.

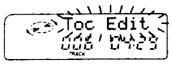
4 Press II again to release standby and start recording.

"REC" lights up and recording starts.
The recording level is adjusted automatically (AGC—Automatic Gain Control).


Available recording time
-59m59s

5 Press ■ to end recording.

"Toc Edit" flashes and the recorder starts writing the new data to the MD. The indication goes out when writing is completed.



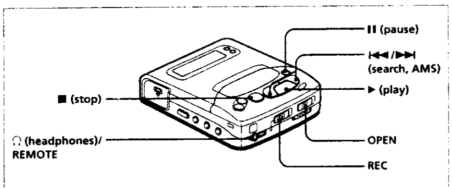
Note
Do not move or jog the recorder while "Toc Edit" is flashing in the display.

To	Press/Slide
Pause/release pause	II
Eject the MD	After stop (■), slide OPEN and open the lid

⇨Recording from a CD, etc.

Recording from a specific point of a previous recording

You can record over a part of the previous recording. **Note that all the succeeding tracks will be erased as soon as you start recording.**

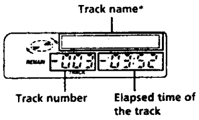

■ (stop)
Ω (headphones)/ REMOTE
II (pause)
I◀◀/▶▶I (search, AMS)
▶ (play)
OPEN
REC

1 Connect the headphones to Ω/REMOTE.

2 Insert the recordable MD.

3 Press ▶ to find the start point of recording.

The recorder plays the previous recording.
To find the beginning of the next track, press ▶▶I.
To find the beginning of succeeding tracks, press ▶▶I repeatedly. If you keep pressing ▶▶I, you can fast-forward the playback while listening to the sound.
To find the beginning of the current or preceding tracks, use I◀◀.

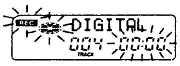

Track name*
Track number
Elapsed time of the track

* No indication appears with MDs that have not been electronically labeled.

4 Press ■ to stop at the point you want to start recording over.

5 While holding down II, slide REC to the right pressing the red button in the center of REC.

"REC" flashes in the display and the recorder enters recording standby mode. **Check the display to make sure the recording will start from the right track.**

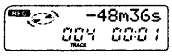


Note
All tracks following this point will be erased as soon as you start recording.

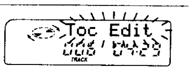
6 Play the sound source.

7 Press II again to release standby and start recording.

The new track is recorded as a succeeding track from this point.
The recording level is adjusted automatically (AGC—Automatic Gain Control).



8 Press ■ to end recording.



"Toc Edit" flashes and the recorder starts rewriting the new data to the MD. The indication goes out when rewriting is completed.

◘ Note

Do not move or jog the recorder while "Toc Edit" is flashing in the display.

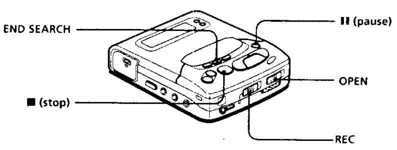
To	Press/Slide
Pause/release pause	II
Eject the MD	After stop (■), slide OPEN and open the lid

☞ If you want to keep the latter tracks of the recorded MD

Erase the preceding tracks so that the latter tracks are renumbered from the beginning of the MD (see *Erasing recordings*, page 48). Then start recording new tracks from the last point of the track you want to keep.

Recording on a blank portion of a recorded MD

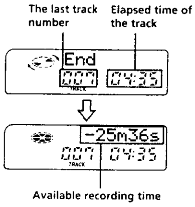
You can record new tracks after the previous recording.



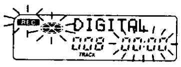
1 Insert the recordable MD.

2 Press END SEARCH.

The recorder quickly searches for the end of the previous recording and displays the remaining time available for recording.
Recording will be made from this point.



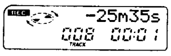
3 While holding down II, slide REC to the right pressing the red button in the center of REC.



"REC" flashes in the display and the recorder enters recording standby mode.

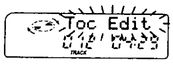
4 Play the sound source.

5 Press II again to release standby and start recording.



The recording level is adjusted automatically (AGC—Automatic Gain Control).

6 Press ■ to end recording.



"Toc Edit" flashes and the recorder starts rewriting the new data to the MD. The indication goes out when rewriting is completed.

◘ Note

Do not move or jog the recorder while "Toc Edit" is flashing in the display.

To	Press/Slide
Pause/release pause	II
Eject the MD	After stop (■), slide OPEN and open the lid

Useful tips on recording

To monitor the sound being recorded

Connect the headphones to ∩/REMOTE and adjust the volume by pressing VOL +/–. Sound levels are copied to the MD automatically and independently of the volume for monitoring.

To check the tracks recorded

Connect the headphones to ∩/REMOTE and press ▶ after you stop recording. The recorder will play from the point where you stopped recording.

To resume recording from the point the MD stopped (Resume function)

If you stop recording and do not eject the MD nor open the lid, the recorder will resume recording from the point where the MD stopped.

◘ Note

As soon as you start recording, all the succeeding tracks of the previous recording will be erased.

To start recording quickly

You can start recording simply by sliding REC to the right.
In some cases, however, the recorder does not enter the recording mode immediately after you slide the switch—when you try to start recording as soon as you insert an MD, when you try to start recording over from a specific point of a previous recording as soon as you search the point, and so on. In these cases, start playing the sound source after the record indicator lights up.

⇨Recording from a CD, etc.

How sources and their track divisions are marked

Recording source	Track divisions are
Digital source (CDs, MDs)	Marked (copied)
Analog source (tapes)	Marked (copied) after more than 2 seconds of silence
Microphone	Not marked (copied) (can be added manually)

When you press II while recording from any source, the recorder recognizes it as a track division. When pause is released, the recording resumes on a new track number.

To add and erase track marks, see *Track marking a recording*, page 44.

Track divisions may be copied incorrectly
- when you record from some CD players or multi disc players.
- when the source is in shuffle or program play mode.

In this case, play the source in normal play mode.

Knowing the recording condition

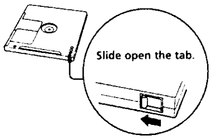
The record indicator shows the recording condition.

Condition	Record indicator
Recording	lights up
Recording standby	flashes
Recording with less than 3 minutes' recording time available	slowly flashes

Notes
- **When you record from a portable CD player using the digital connection,** "NO SIGNAL" may appear in the display after you set the recorder to recording standby mode. This happens when the sound source does not send the digital signals correctly. In this case set the CD player to play pause before you start recording.
- This recorder does not label or copy character information such as disc names and track names.

☞ Maximum number of tracks
On this MD recorder 254 tracks can be recorded.

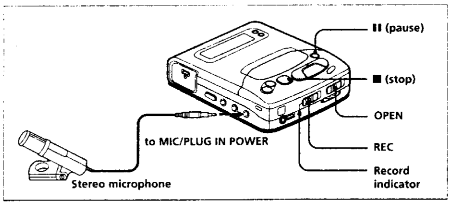
☞ Protecting a recorded MD
To record-protect an MD, slide open the tab at the side of the MD (so the tab is concealed).
In this position, the MD cannot be recorded.


Slide open the tab.

Recording from a microphone

Recording

This section explains how to record from the first track of an MD. To record from a specific point of a previous recording, see page 22. To record on a blank portion of a recorded MD, see page 25.
When you record over a previous recording, note that all the succeeding tracks will be erased as soon as you start recording.


II (pause)
■ (stop)
OPEN
to MIC/PLUG IN POWER
REC
Record indicator
Stereo microphone

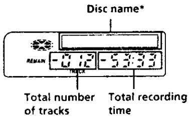
1 Connect a microphone at MIC/PLUG IN POWER.

Use a stereo microphone (ECM-909A, ECM-727P, etc., not supplied).

◘ Note
To record from a microphone, you must first disconnect the digital source. If connected, the recorder will not switch to microphone input.

2 Insert a recordable MD.

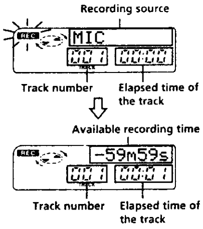
Slide OPEN to open the lid, insert a recordable MD (supplied) with the arrow pointing toward the opening, and close the lid.
Once you open the lid, the recorder will start recording from the beginning of the first track.


Disc name*
REMAIN
-012
-53:33
TRACK
Total number of tracks
Total recording time

* No indication appears with MDs that have not been electronically labeled.

3 While pressing the red button in the center of REC, slide REC to the right.

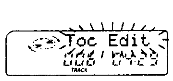
Recording starts when the record indicator lights up. The recording level is adjusted automatically (AGC—Automatic Gain Control).


Recording source
REC
MIC
001
00:00
TRACK
Track number
Elapsed time of the track
Available recording time
REC
-59m59s
001
00:01
TRACK
Track number
Elapsed time of the track

◘ Note
When you record over a previous recording, all the succeeding tracks will be erased as soon as you start recording.

4 Press ■ to end recording.

"Toc Edit" flashes and the recorder starts writing the new data to the MD. The indication goes out when writing is completed.


Toc Edit
TRACK

◘ Note
Do not move or jog the recorder while "Toc Edit" is flashing in the display.

⇨Recording from a microphone

To start recording precisely

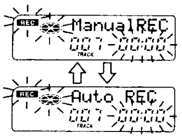
1 **While holding down II, slide REC to the right pressing the red button in the center of REC.**
The recorder enters recording standby mode.

2 **When you want to record, press II again.**

Adjusting the recording level (Manual recording)

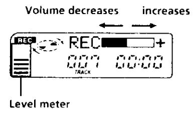
Sound levels of digital sources are automatically copied to the MD. However, if you are recording from a microphone or an analog source, you can set the recording level manually.

1 **While holding down II, keep sliding REC to the right for more than 2 seconds.**
"ManualREC" appears. To return to the automatic control, repeat the same operation.



2 **Play the source.**

3 **While observing the level meter, adjust the recording level using ⏮/⏭.**
Press ⏭ to increase. Press ⏮ to decrease.
Adjust the level to around the middle of the level meter.
Excessive level will make the playback sound distorted.



🅸 Note

Once you start manual recording, you cannot adjust the recording level or the volume for monitoring. Adjust the level or the volume while the recorder is in standby mode.

4 **Press II to release pause and start recording.**

5 **Press ■ to end recording.**
The recording level control is switched to automatic control.

Knowing the recording condition

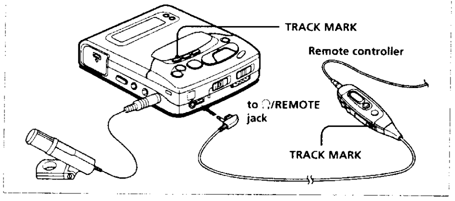
The record indicator shows the recording condition while recording from a microphone.

Condition	Record indicator
Recording	flashes according to loudness of the source (voice mirror)
Recording standby	flashes
Recording with less than 3 minutes' recording time available	slowly flashes

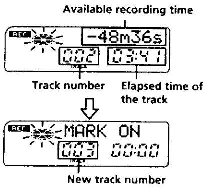
⇨Recording from a microphone

Track marking while recording

Track marking essentially adds tracks while recording and enables you to quickly find and play from the marked position. The track marking feature is useful particularly when recording from a microphone. For example, when recording a discussion where a number of people are speaking, insert a track mark (a new track number) every time the speaker changes. You can also insert a track mark when recording from a digital or analog source connected to the OPT/LINE IN jack.
The remote controller will help you easily insert a track mark while recording.



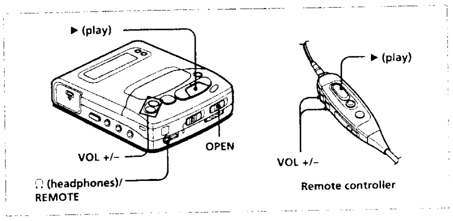
While recording, press TRACK MARK.
The record indicator flashes and a short beep sounds in the headphones.
The track number will increase by one.



Searching for the marked point

After recording, press ⏮/⏭ to find the points where you inserted track marks.

Playing an MD

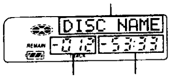


1 Connect the headphones at ∩/REMOTE.

2 Insert an MD.

Slide OPEN to open the lid, insert an MD with the label side up and the arrow pointing toward the opening, and close the lid.

Disc name*



Total track number

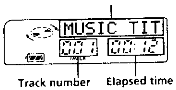
Total recording time

* No indication appears with MDs that have not been electronically labeled.

3 Press ►.

The recorder will play from the beginning of the first track.

Track name*

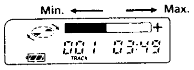


Track number

Elapsed time of the track

* No indication appears with MDs that have not been electronically labeled.

4 Adjust the volume by pressing VOL +/– .



Note

If you cannot increase the volume, the AVLS switch on the remote controller is set to ON. Set the switch to OFF. When you try to increase the volume while the switch is set to ON, the volume indication flashes and you cannot increase the volume to the maximum. (See *Useful tips on playing an MD* on page 42.)

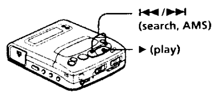
To	Press	Beep on the headphones (when operating on the remote controller)
pause/release pause	❚❚	-------- (continuous short beep)
stop	■	— (one long beep)
search while listening	keep pressing ◄◄ / ►►❙	(none)
quickly search without listening	❚❚ (pause) and keep pressing ◄◄ / ►►❙	(none)
find the beginning of the current or preceding tracks (AMS)	slightly press ❙◄◄	--- (three short beeps)
find the beginning of the next or succeeding tracks (AMS)	slightly press ►►❙	-- (two short beeps)
eject the MD	after ■ (stop), slide OPEN and open the lid	(none)

⇨Playing an MD

Playing specific tracks

You can find a specific track before playing an MD and start playing from that track. For this operation, only the controls on the recorder can be used.

1 **Press ►►❙ or ❙◄◄ on the recorder to find a specific track.**



2 **Press ► on the recorder.**

BEAUTIFUL
003 00:00
TRACK

Notes

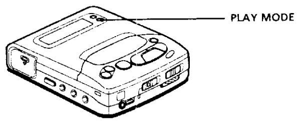
- This recorder has a shock-resistant memory. However, if it is subject to continuous vibration, the sound may skip or mute while playing an MD. In this case, use the recorder in a stable place.
- Tracks that are very short, such as a brief narration or introduction, may cause the sound to skip while being played.

You can resume playing from the point the MD stopped (Resume function).

If you stop playing partway and do not eject the MD nor open the lid, the recorder will resume playing from the point where the MD stopped.

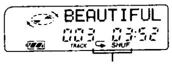
Playing tracks repeatedly

You can play tracks repeatedly in three ways—all repeat, single repeat, and shuffle repeat.



Press PLAY MODE while the MD is playing.

Each time you press PLAY MODE, the play mode indication changes as follows.



Play mode indication

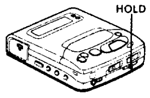
To play	Indication
all the tracks once (normal play)	(none)
all the tracks repeatedly (all repeat)	↻
a single track repeatedly (single repeat)	↻1
all the tracks in random order repeatedly (shuffle repeat)	↻ SHUF

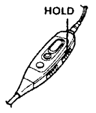
Useful tips on playing an MD

Locking the controls (Hold function)

To prevent the buttons from being accidentally operated while you are walking, use the Hold function.

Slide HOLD in the direction of the arrow.
On the recorder, slide HOLD to lock the controls of the recorder. On the remote controller, slide HOLD to lock the controls of the remote controller.

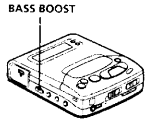


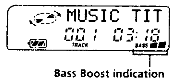


Emphasizing the bass (Bass Boost feature)

The Bass Boost feature intensifies low frequency sound for richer bass reproduction.

While the MD is playing, press BASS BOOST.
Each time you press BASS BOOST, you can get two stages of the Bass Boost.




MUSIC TIT
001 03:18
TRACK
BASS
Bass Boost indication

To emphasize	Indication
no emphasis (normal play)	(none)
slightly	BASS ▰
strongly	BASS ▰▰

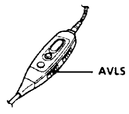
Note
If the volume is too high, the sound may crack or distort. If this happens, turn down the volume.

⇨ Useful tips on playing an MD

Adjusting the sound to an appropriate level (AVLS function)

The AVLS (Automatic Volume Limiter System) function allows you to limit the maximum volume of the recorder without degrading the sound quality.
Hearing experts advise against continuous, loud and extended play. Use the AVLS function to avoid excessive pressure to your ears.

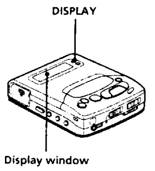
Set AVLS on the remote controller to ON.
The volume is kept at a moderate level without degradation of the sound quality, even if you attempt to turn the volume up higher.

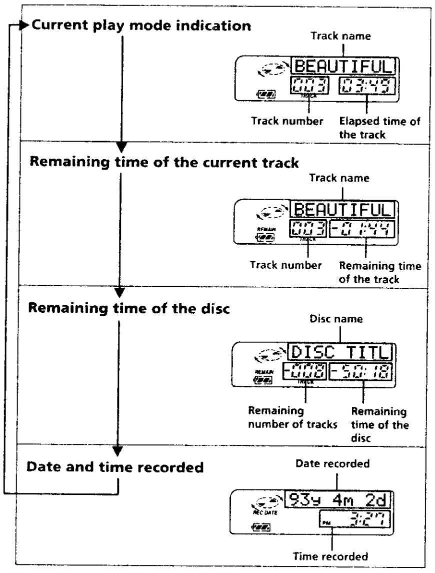


Displaying disc and track names

If you are playing a premastered or recorded MD that has been electronically labeled, you can display information on the MD while it is playing.

While the MD is playing, press DISPLAY.
Each time you press the button, the display changes as follows.

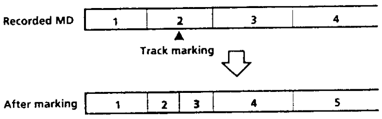

DISPLAY
Display window

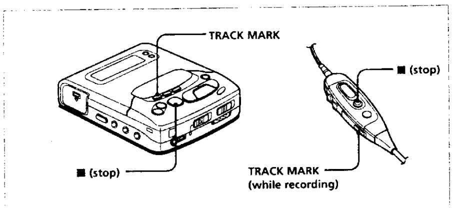

Current play mode indication
Track name
BEAUTIFUL
003 03:49
Track number
Elapsed time of the track
Remaining time of the current track
Track name
BEAUTIFUL
REMAIN
003 -01:44
Track number
Remaining time of the track
Remaining time of the disc
Disc name
DISC TITL
REMAIN
-008 -50:18
Remaining number of tracks
Remaining time of the disc
Date and time recorded
Date recorded
93y 4m 2d
REC DATE
PM 3:27
Time recorded

Notes
- No character information appears with MDs that have not been electronically labeled.
- This recorder does not label or copy any character information such as disc names and track names.

Track marking a recording

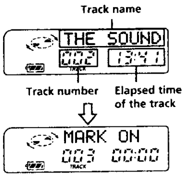
You can add track marks so that you can quickly find and play from the marked position.
The track numbers will increase as follows.





While playing or recording, press TRACK MARK on the recorder at the point you want to mark.

The TRACK MARK button on the remote controller can be used only while recording.
If you want to add more marks, press the button at the desired points.



To erase the track mark
Refer to the next section, *Erasing a track mark*, page 46.

Notes

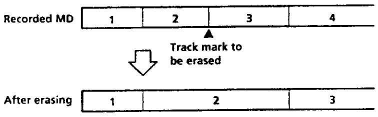
- When you press ■ after adding track marks, "Toc Edit" flashes and the recorder starts writing the new data to the MD. Do not move or jog the recorder while "Toc Edit" is flashing in the display.
- You cannot add track marks if the MD has the tab open for record-protection. Before adding track marks, close the tab on the side of the MD.

☞ Date and time recorded
The recorder adds the elapsed time of the previous track to the date and time it was recorded. These will be stamped on the new track.

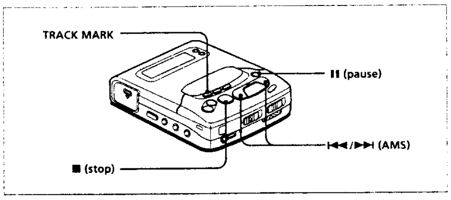
☞ Maximum number of tracks
On this recorder 254 tracks can be recorded.

Erasing a track mark

When a track mark is erased, the two tracks preceding and following the mark will be combined. The track numbers will change as follows.



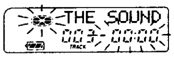
To erase a track mark, use TRACK MARK on the recorder. You cannot erase a track mark with TRACK MARK on the remote controller.



1 While the MD is playing, press II to pause.

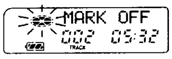
2 Find the track mark you want to erase by pressing I◀◀ or ▶▶I slightly.

For example, if you want to erase the third track mark, find the beginning of the third track.
"00:00" flashes in the display.



3 Press TRACK MARK on the recorder to erase the mark.

The track mark is erased and the two tracks are combined.
The pause is released and the recorder starts to play from the point you erased the track mark.
If you want to erase more marks, repeat steps **1**, **2** and **3** .



To add a track mark again
Search for the position and add a track mark again. Refer to the previous section, *Track marking a recording*.

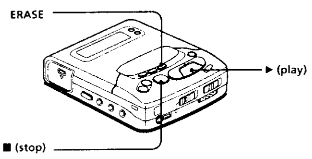
Notes

- When you press ■ after erasing track marks, "Toc Edit" flashes and the recorder starts writing the new data to the MD. Do not move or jog the recorder while "Toc Edit" is flashing in the display.
- You cannot erase track marks if the MD has the tab open for record-protection. Before erasing track marks, close the tab on the side of the MD.
- If you have recorded or erased many times on the same disc, the data of a single track may be scattered throughout the disc. When the data is scattered in groups of less than 8 seconds long, the recorder will not be able to combine the tracks. In this case you cannot erase track marks. This is one of the features of the MD system, not a malfunction.

☞ Date and time recorded
The combined track whose mark has been erased is recorded with the date and time of the beginning of the first of the two combined tracks.

Erasing recordings

You can quickly erase a recorded track. **Note that once a recording has been erased, you cannot retrieve it.**



1 Play the track you want to erase.

Check the tracks preceding and succeeding the track you want to erase, and make sure it is the right one.

2 Press ERASE.

"Erase OK?" and "PushErase" appear in the display alternately, and the recorder enters pause mode.
Check the track number again in the display.
To cancel erasing, press ■.

3 Press ERASE again to erase the track.

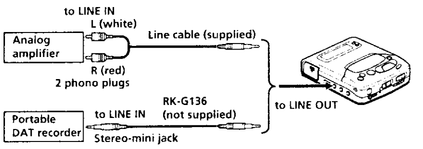
The track is erased from the MD and the remaining tracks are renumbered. The recorder then starts to play the succeeding track. If you have erased the last track of the MD, the recorder pauses at the end of the preceding track.
To erase more tracks, repeat steps **1**, **2**, and **3**.

Notes

- When you press ■ after erasing recordings, "Toc Edit" flashes and the recorder starts writing the new data to the MD. Do not move or jog the recorder while "Toc Edit" is flashing in the display.
- You cannot erase tracks if the MD has the tab open for record-protection. Before erasing tracks, close the tab on the side of the MD.

Connecting to a stereo system

Hooking up an amplifier or a tape player



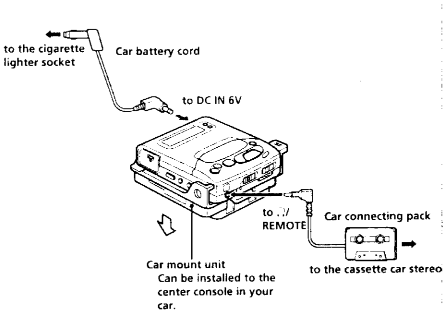
Connect the line cable (supplied, or RK-G136, not supplied) to the LINE OUT jack of the recorder and the LINE IN jack of your stereo system.
The output is analog.

Using in a car

Hooking up a car stereo system

You can listen to MDs with your car stereo system using the following equipment.

-Car Mount Kit CPM-MZR2K (not supplied, contents: Car mount unit, Car connecting pack, Car battery cord)
Refer to the operating manual of the equipment for more details.


to the cigarette lighter socket
Car battery cord
to DC IN 6V
to ∩/ REMOTE
Car connecting pack
Car mount unit
Can be installed to the center console in your car.
to the cassette car stereo

Note
Do not put the recorder on a dashboard or leave it in a car parked in direct sunlight since the temperature may rise excessively.

Error messages

If the recorder cannot carry out an operation, one of the following error messages may flash in the display window.

This message will flash	If
BLANKDISC	you try to play an MD with no recording on it.
BUSY	you try to operate the recorder while it is accessing the recorded data. Wait until the message goes out (in rare cases, it may take 2-3 minutes).
CANNOT	• you try to record over or edit a track which has been track protected.* • you try to erase a track mark at the beginning of the first track. • you try to erase a track mark to combine tracks the recorder cannot combine.**
DISC ERR	the recorder cannot read the MD (it is scratched or dirty). Reinsert the MD. If the same message still appears, replace the MD.
DISC FULL	there is no more space on the MD (less than 12 seconds available).
ERR STOP	• there is a malfunction while you are recording. • the recorder cannot read the recorded data on the MD. Replace the MD.
HOLD	• you try to operate the recorder with the HOLD switch slid in the direction of the arrow.
LOW BATT	• the rechargeable battery or dry batteries are weak. Charge the rechargeable battery or replace the dry batteries.
NO COPY	• you try to make a copy from an MD that is protected by the Serial Copy Management System. You cannot make copies from a digitally connected source which was itself recorded using the digital connection. Use the analog connection instead.
NO DISC	• you try to play or record with no MD in the recorder.

This message will flash	If
NO SIGNAL	• the recorder cannot detect digital input signals. Make sure that the source is connected firmly and it has the same sampling frequency as the recorder (44.1 kHz).
PB DISC	• you try to record or edit on a pre-mastered MD (PB means playback.)
PROTECTED	• you try to record or edit on a MD with the tab in the record-protect position.
TEMP OVER	• heat has built up in the recorder. Leave the recorder to cool down.
TRK FULL	• there is no more space for new data when you are recording or editing the MD. The MD cannot be edited nor recorded any further.

* Track-protected MDs — Some MD recorders will let you protect individual tracks from being recorded over. This recorder, however, does not offer this feature.

** If you have recorded or erased many times on the same MD, the data of a single track may be scattered throughout the MD. When the data is scattered in groups of less than 8 seconds long, the recorder will not be able to combine the tracks.

What is the MD?

How MiniDiscs work

MiniDiscs (MD) come in two types: premastered (prerecorded) and recordable (blank). Premastered MDs, recorded at music studios, can be played back almost endlessly. However, they cannot be recorded on or over like cassette tapes. To record, you must use a "recordable MD".

Premastered MDs

Premastered MDs are recorded and played like regular CDs. A laser beam focuses on the pits in the surface of the MD and reflects the information back to the lens in the recorder. The recorder then decodes the signals and plays them back as music.

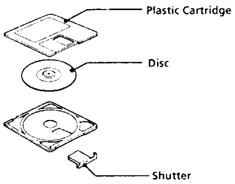
Recordable MDs

Recordable MDs, which use magneto-optical (MO) technology, can be recorded again and again. The laser inside the recorder applies heat to the MD, demagnetizing the magnetic layer of the MD. The recorder then applies a magnetic field to the layer. This magnetic field corresponds exactly to the audio signals generated by the connected source. (The north and south polarities equate to digital "1" and "0".) The demagnetized MD adopts the polarity of the magnetic field, resulting in a recorded MD.

How the MiniDisc got so small

The 2.5-inch MiniDisc, encased in a plastic cartridge that looks like a 3.5-inch diskette (see illustration below), uses a new digital audio compression technology called ATRAC (Adaptive TRansform Acoustic Coding). To store more sound in less space, ATRAC extracts and encodes only those frequency components actually audible to the human ear.

Parts making up a MiniDisc



Quick Random Access

Like CDs, MDs offer instantaneous random access to the beginning of any music track. Premastered MDs are recorded with location addresses corresponding to each music selection.

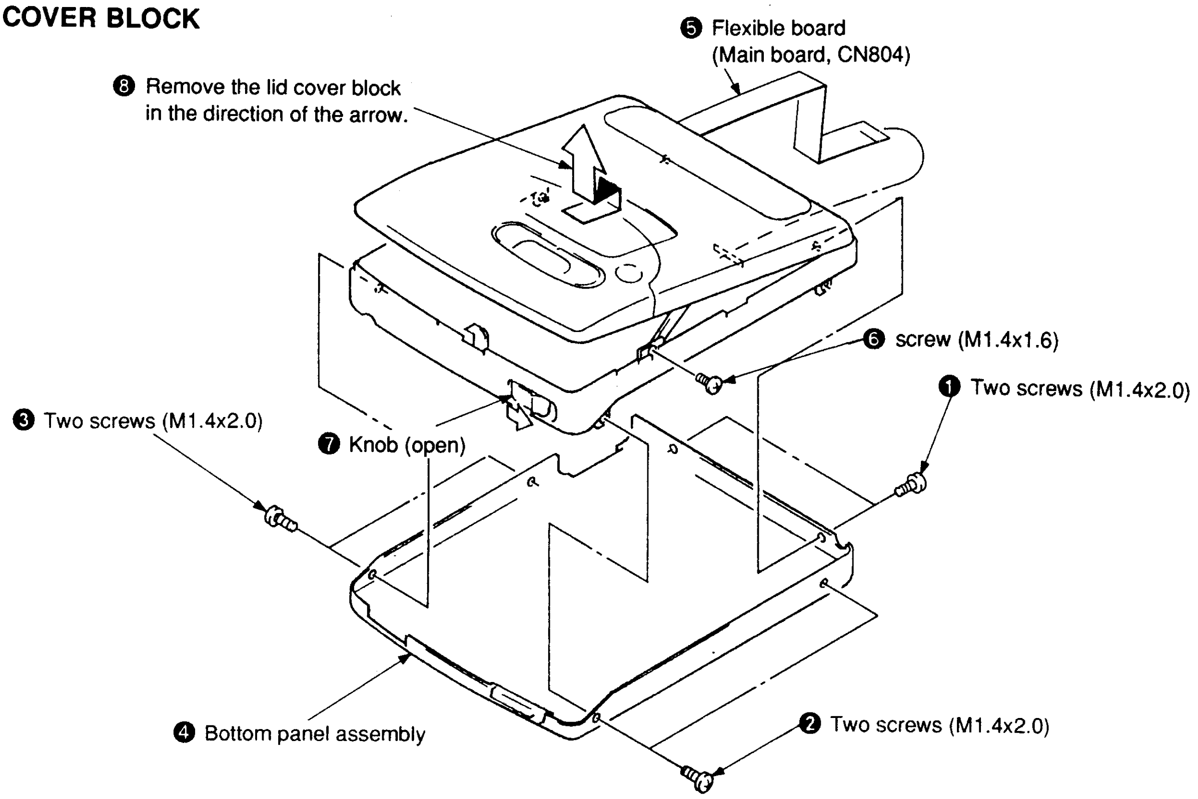
Shock-Resistant Memory

One major drawback of optical read systems is that they can skip or mute when subject to vibration. The MD system resolves this problem by using a buffer memory that stores audio data.

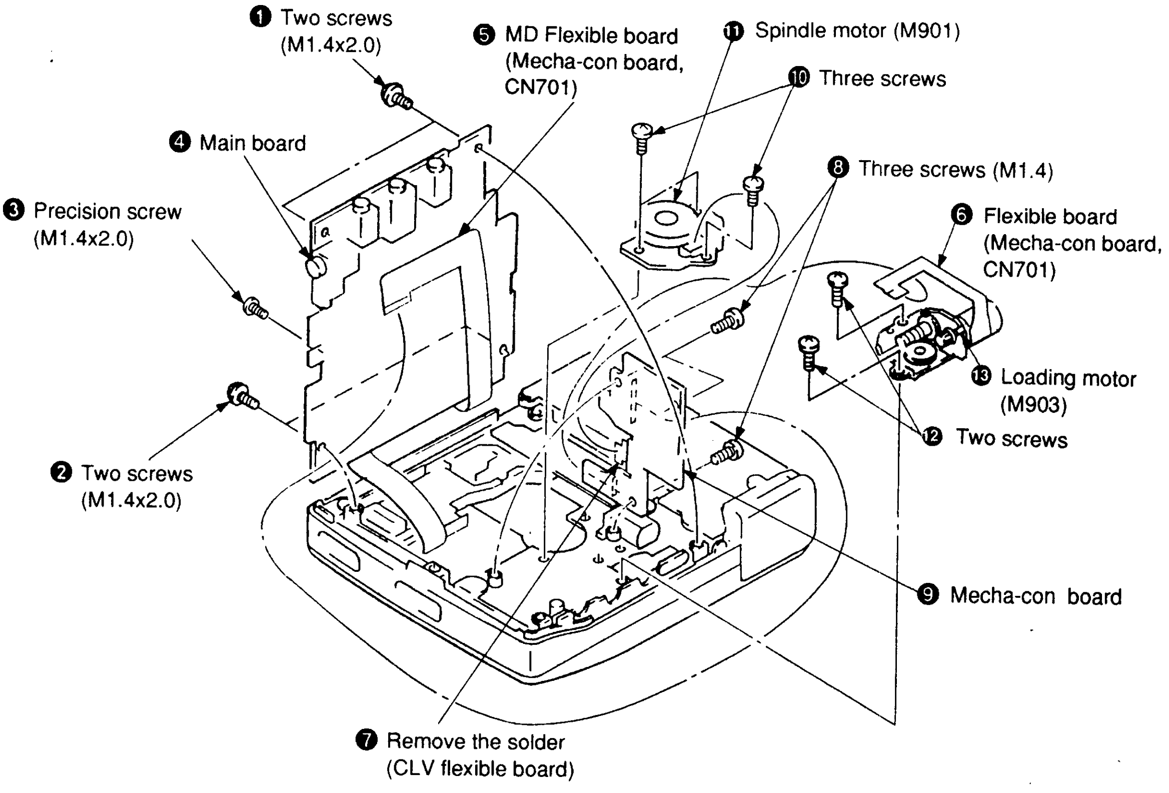
SECTION 3
DISASSEMBLY

Note : Follow the disassembly procedure in the numerical order given.

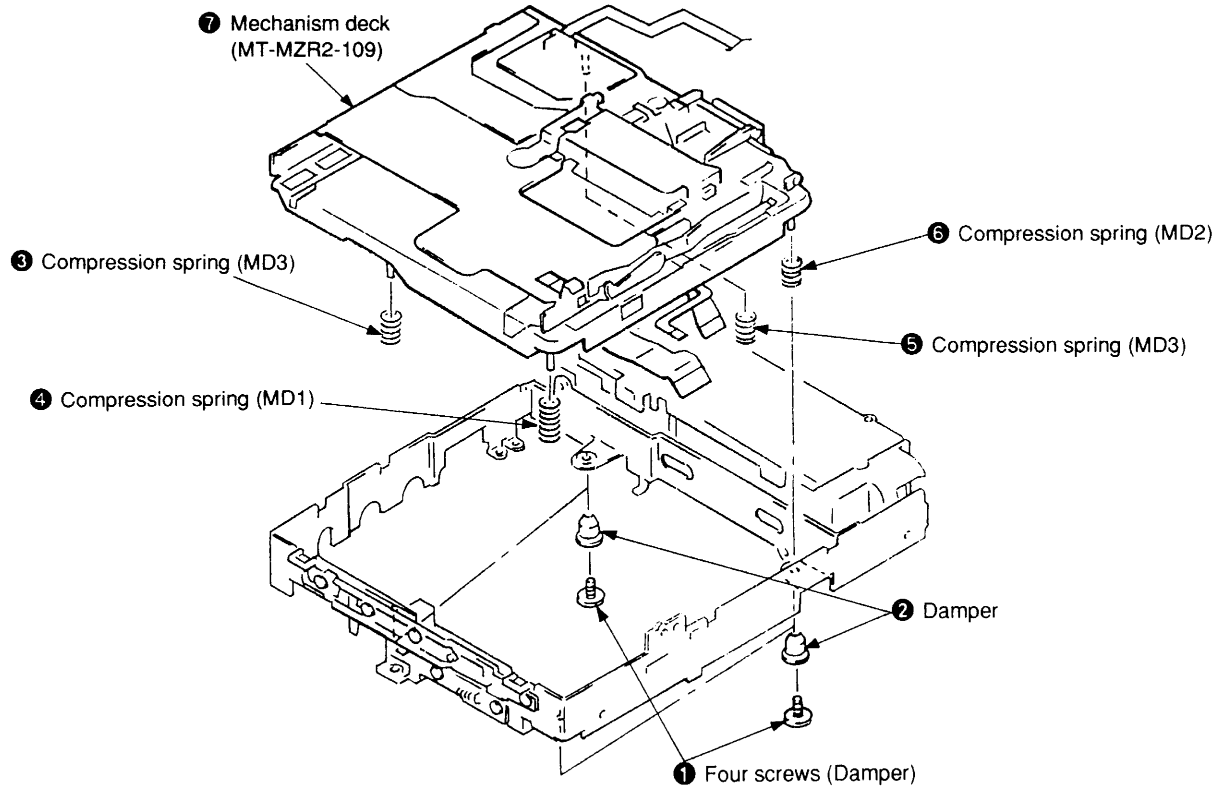
3-1. LID COVER BLOCK


❺ Flexible board (Main board, CN804)
❽ Remove the lid cover block in the direction of the arrow.
❻ screw (M1.4x1.6)
❶ Two screws (M1.4x2.0)
❸ Two screws (M1.4x2.0)
❼ Knob (open)
❹ Bottom panel assembly
❷ Two screws (M1.4x2.0)

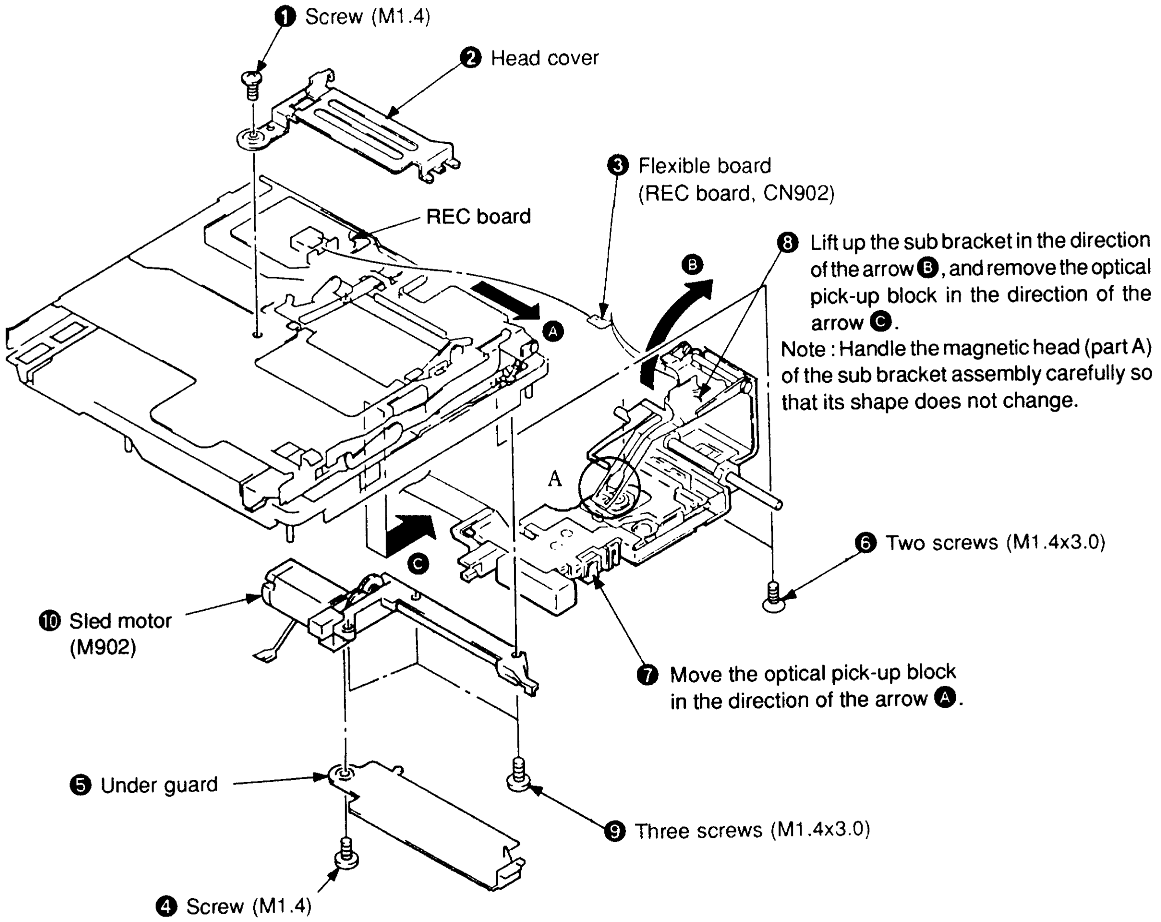
3-2. MAIN BOARD, SPINDLE MOTOR AND LOADING MOTOR


❶ Two screws (M1.4x2.0)
❺ MD Flexible board (Mecha-con board, CN701)
⓫ Spindle motor (M901)
❿ Three screws
❹ Main board
❽ Three screws (M1.4)
❸ Precision screw (M1.4x2.0)
❻ Flexible board (Mecha-con board, CN701)
⓭ Loading motor (M903)
⓬ Two screws
❷ Two screws (M1.4x2.0)
❾ Mecha-con board
❼ Remove the solder (CLV flexible board)

3-3. MECHANISM DECK (MT-MZR2-109)


❼ Mechanism deck (MT-MZR2-109)
❻ Compression spring (MD2)
❸ Compression spring (MD3)
❺ Compression spring (MD3)
❹ Compression spring (MD1)
❷ Damper
❶ Four screws (Damper)

3-4. SLED MOTOR AND OPTICAL PICK-UP BLOCK (KSM-190A)


❶ Screw (M1.4)
❷ Head cover
❸ Flexible board (REC board, CN902)
REC board
🅑
🅐
A
🅒
❻ Two screws (M1.4x3.0)
❿ Sled motor (M902)
❺ Under guard
❾ Three screws (M1.4x3.0)
❹ Screw (M1.4)

❽ Lift up the sub bracket in the direction of the arrow 🅑, and remove the optical pick-up block in the direction of the arrow 🅒.

Note : Handle the magnetic head (part A) of the sub bracket assembly carefully so that its shape does not change.

❼ Move the optical pick-up block in the direction of the arrow 🅐.

SECTION 4
TEST MODE

OUTLINE

This unit uses an EVR (electric variable resistor) instead of the conventional semi-fixed resistor as its adjusting device. The EVR is controlled by the main microprocessor (IC805). The main microprocessor reads the data written in the EEPROM (IC804) and the EVR D-A converts this data to produce the adjusting voltage. Therefore, when adjusting this unit, this adjustment data written in the EEPROM must be rewritten. It can be rewritten by setting the unit into the test mode.

SETTING THE TEST MODE

Method 1 : Short-circuit the soldering bridge of JP801 (TEST) of the main board (connect Pin ⑱ of IC803 to GND) and supply the power. (If the test mode is not set, press the RESET switch at the bottom of the unit or turn on and off the power four to five times.)

Method 2 : Set the HOLD switch of the unit to "HOLD" and supply the power while pressing the ► key and ■ key of this unit and ■ key of the headphone remote controller.

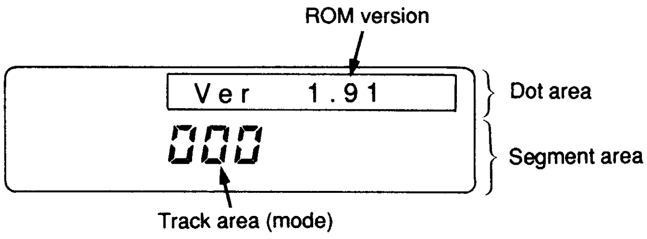
RELEASING THE TEST MODE

When set using method 1 : Turn off the power and open the soldering bridge of JP801 (TEST) of the main board.

When set using method 2 : Turn off the power.

TEST MODE OPERATIONS

When the test mode is set, the LCD will display the following.


ROM version
Ver 1.91
000
Dot area
Segment area
Track area (mode)

- Dot area : Repeats the following.
  ↳ ROM version→All light up→All go off→
- Segment area:Repeats the following.
  ↳Mode 000→All light up→All go off→
- While the ▮▮ key is pressed, the display will be preserved and therefore can be checked.
- As a 1 kHz, 0 dB signal will be output from the line output and headphone output, the audio system can be checked.

TEST MODE STRUCTURE

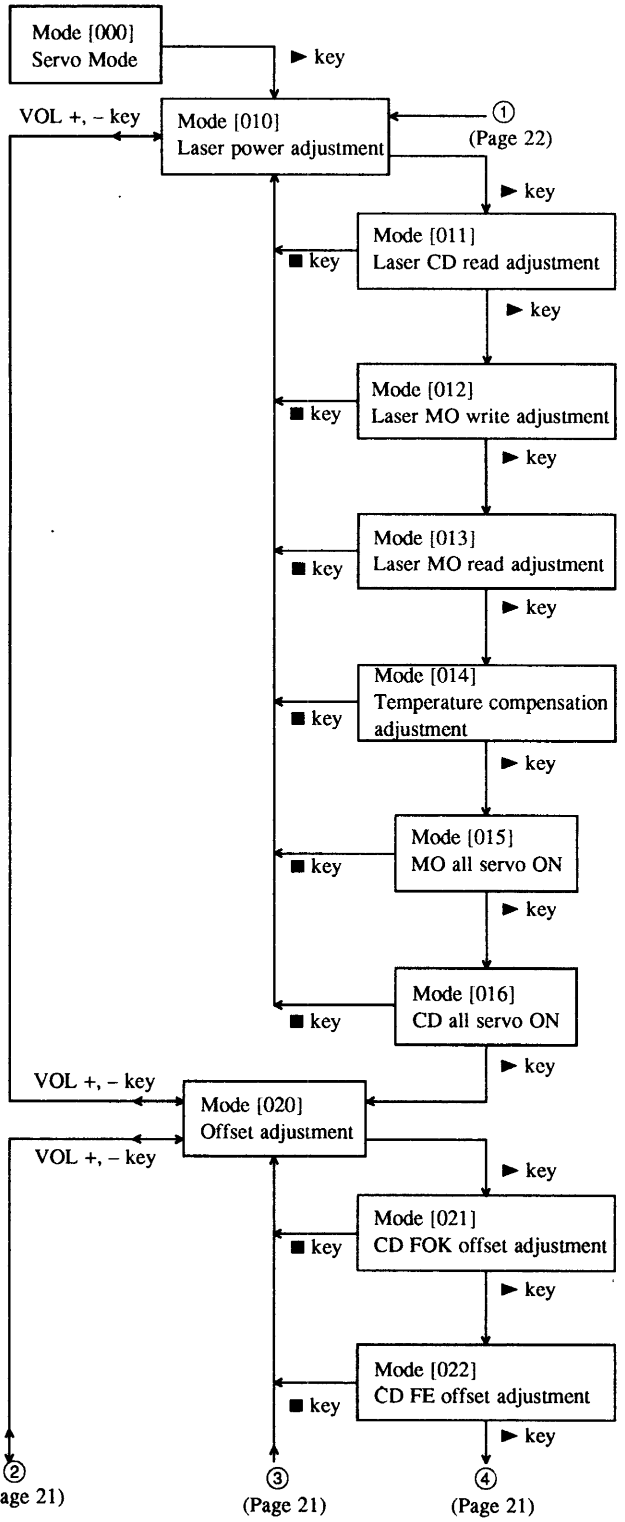
The test mode of this unit is made up of the following four modes.

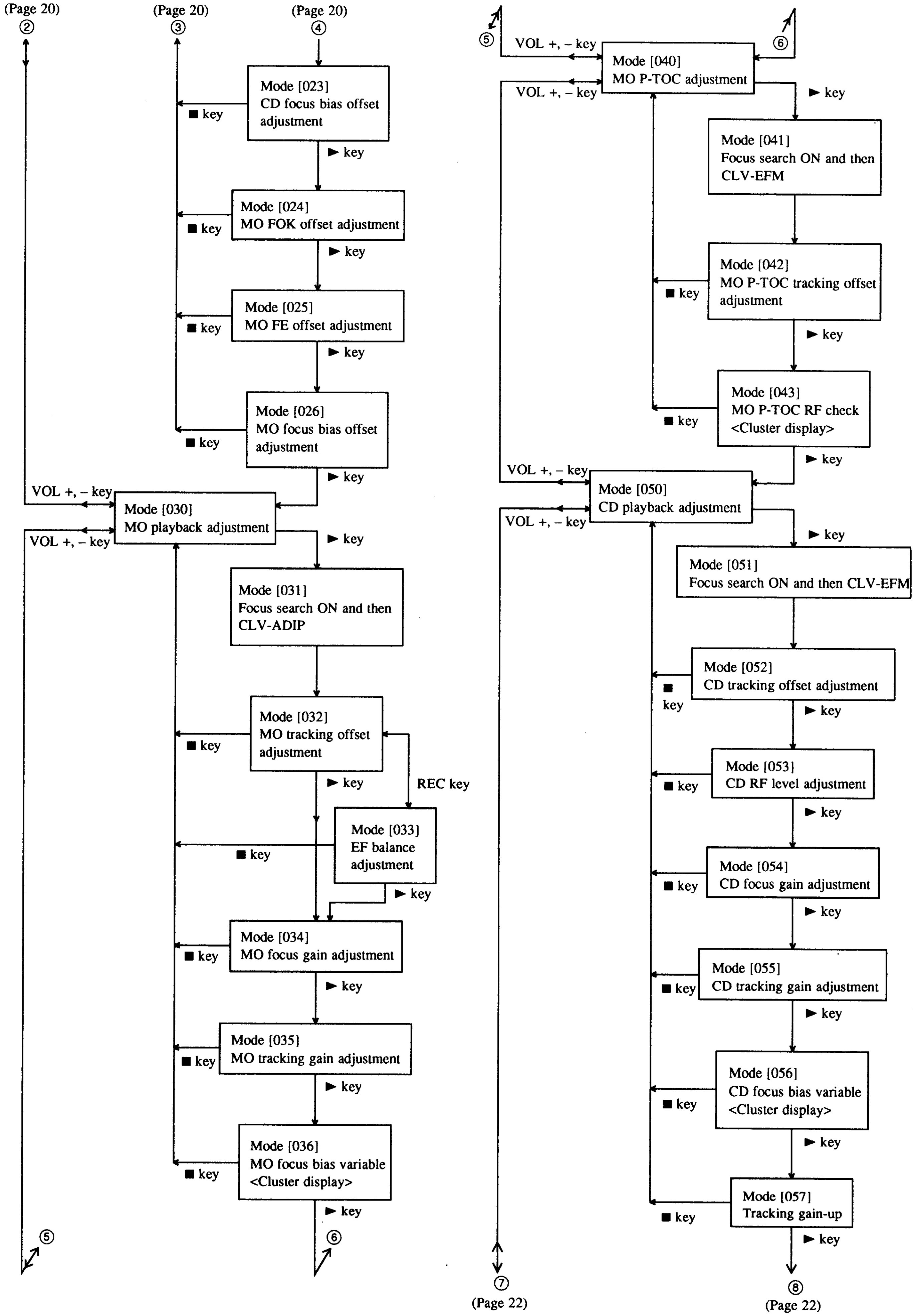
- Servo mode (0XX displayed at mode)
- Audio mode (1XX displayed at mode)
- Mechanism mode (2XX displayed at mode)
- Power mode (3XX displayed at mode)

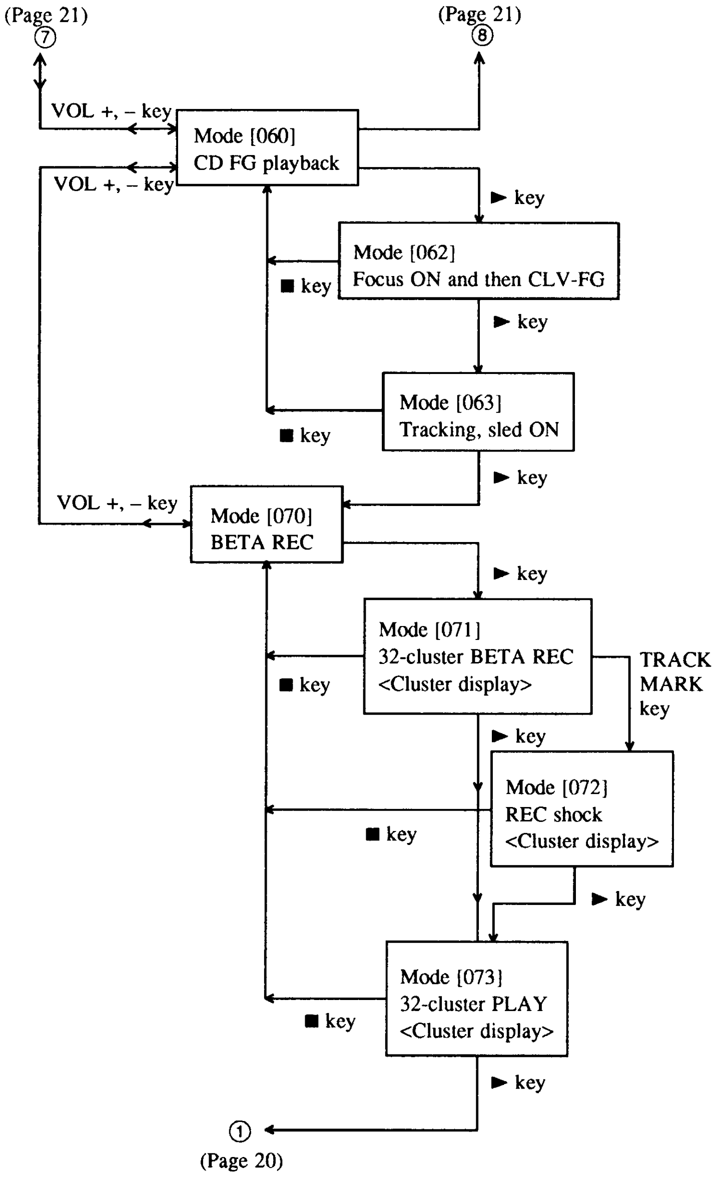
SERVO MODE

- When the test mode is set and the mode displayed is set to 000 using the VOL +, – key, the servo mode will be set and displayed as "Test Mode Operations".
- When the ►►▮ or ▮◄◄ key is pressed, the optical pick-up will move to the external or internal periphery.
- To set other modes, press the VOL +, – key.

- **Structure of Servo Mode**

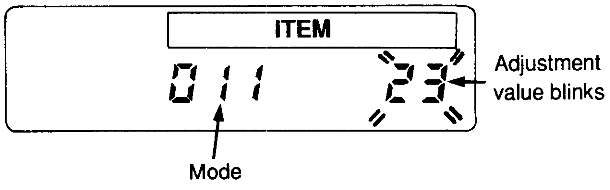

Mode [000]
Servo Mode
► key
VOL +, – key
Mode [010]
Laser power adjustment
①
(Page 22)
► key
■ key
Mode [011]
Laser CD read adjustment
► key
■ key
Mode [012]
Laser MO write adjustment
► key
■ key
Mode [013]
Laser MO read adjustment
► key
■ key
Mode [014]
Temperature compensation adjustment
► key
■ key
Mode [015]
MO all servo ON
► key
■ key
Mode [016]
CD all servo ON
► key
VOL +, – key
Mode [020]
Offset adjustment
VOL +, – key
► key
■ key
Mode [021]
CD FOK offset adjustment
► key
■ key
Mode [022]
CD FE offset adjustment
► key
②
(Page 21)
③
(Page 21)
④
(Page 21)


(Page 20)
②
(Page 20)
③
(Page 20)
④
Mode [023]
CD focus bias offset adjustment
■ key
► key
Mode [024]
MO FOK offset adjustment
■ key
► key
Mode [025]
MO FE offset adjustment
■ key
► key
Mode [026]
MO focus bias offset adjustment
■ key
► key
VOL +, – key
Mode [030]
MO playback adjustment
VOL +, – key
► key
Mode [031]
Focus search ON and then CLV-ADIP
Mode [032]
MO tracking offset adjustment
■ key
► key
REC key
Mode [033]
EF balance adjustment
■ key
► key
Mode [034]
MO focus gain adjustment
■ key
► key
Mode [035]
MO tracking gain adjustment
■ key
► key
Mode [036]
MO focus bias variable
<Cluster display>
■ key
► key
⑤
⑥
⑤
VOL +, – key
⑥
Mode [040]
MO P-TOC adjustment
VOL +, – key
► key
Mode [041]
Focus search ON and then CLV-EFM
Mode [042]
MO P-TOC tracking offset adjustment
■ key
► key
Mode [043]
MO P-TOC RF check
<Cluster display>
■ key
► key
VOL +, – key
Mode [050]
CD playback adjustment
VOL +, – key
► key
Mode [051]
Focus search ON and then CLV-EFM
Mode [052]
CD tracking offset adjustment
■ key
► key
Mode [053]
CD RF level adjustment
■ key
► key
Mode [054]
CD focus gain adjustment
■ key
► key
Mode [055]
CD tracking gain adjustment
■ key
► key
Mode [056]
CD focus bias variable
<Cluster display>
■ key
► key
Mode [057]
Tracking gain-up
■ key
► key
⑦
(Page 22)
⑧
(Page 22)

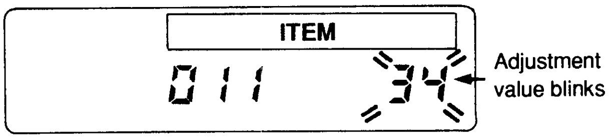

(Page 21)
⑦
(Page 21)
⑧
VOL +, – key
Mode [060]
CD FG playback
VOL +, – key
► key
Mode [062]
Focus ON and then CLV-FG
■ key
► key
Mode [063]
Tracking, sled ON
■ key
► key
VOL +, – key
Mode [070]
BETA REC
► key
Mode [071]
32-cluster BETA REC
<Cluster display>
■ key
TRACK
MARK
key
► key
Mode [072]
REC shock
<Cluster display>
■ key
► key
Mode [073]
32-cluster PLAY
<Cluster display>
■ key
► key
①
(Page 20)

- **Adjusting Method**

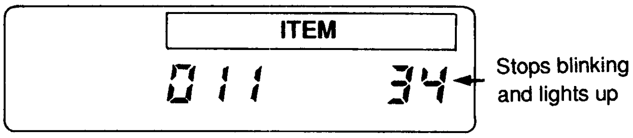
1. Press the VOL +, – key and ► key, and set the adjustment mode.
   (The values written in the EEPROM will be displayed blinking.)


ITEM
011
23
Adjustment value blinks
Mode

2. Press the VOL +, – key and change the adjustment value.
   (The adjustment value changes and blinks.)

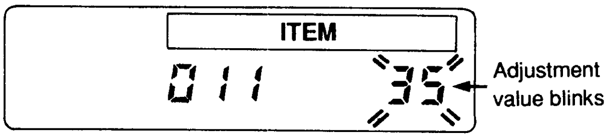

ITEM
011
34
Adjustment value blinks

3. Press the II key. The adjustment data written in the EEPROM will be rewritten.
   (The adjustment value lights up.)

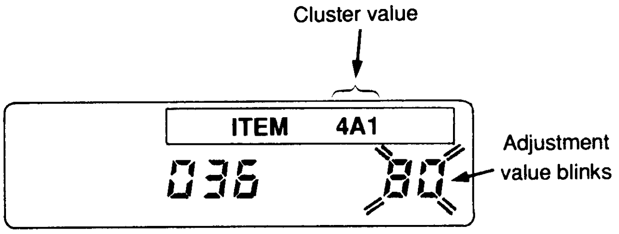

ITEM
011
34
Stops blinking and lights up

Note : The adjustment data will not be rewritten if the II key is not pressed and the original data will remain.

4. Press the VOL +, – key again and set the adjustment mode again.


ITEM
011
35
Adjustment value blinks

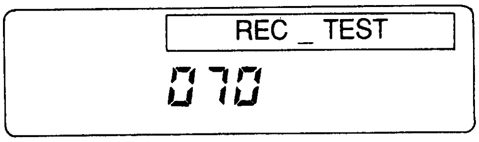
- **Cluster Display**


Cluster value
ITEM 4A1
036
80
Adjustment value blinks

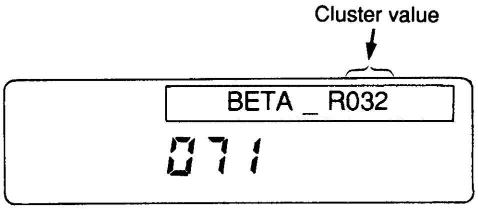
Mode No.	Mode	Dot Area Display
036	MO playback focus bias variable	MO _ ALL<ClusterValue>
043	MO P-TOC RF check	CDL _ AL <Cluster Value>
056	CD playback focus bias variable	CD _ ALL <Cluster Value>
071	32-cluster BETA REC	BETA _ R <Cluster Value>
072	REC shock	RSHOCK <Cluster Value>
073	32-cluster PLAY	RCHECK <Cluster Value>

- **Continuous Recording**

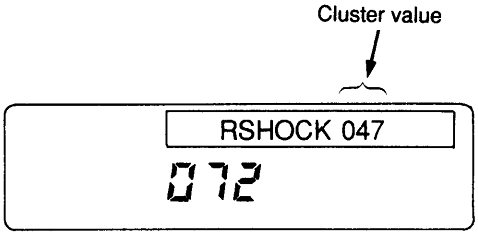
1. Set the BETA REC mode (mode 070).


REC _ TEST
070

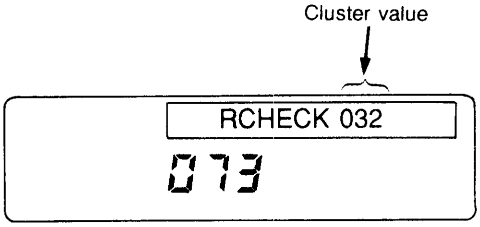
2. Press the ► key. Focus search will turn on, servo all will turn on, 32-cluster access will start, and continuous recording by laser MO writing will start.


Cluster value
BETA _ R032
071

3. Press the TRACK MARK key. REC shock will start and n track jump to the external periphery will occur.


Cluster value
RSHOCK 047
072

4. Press the ► key. Laser MO reading will start and after the head of the 32-cluster is accessed, PLAY will start.

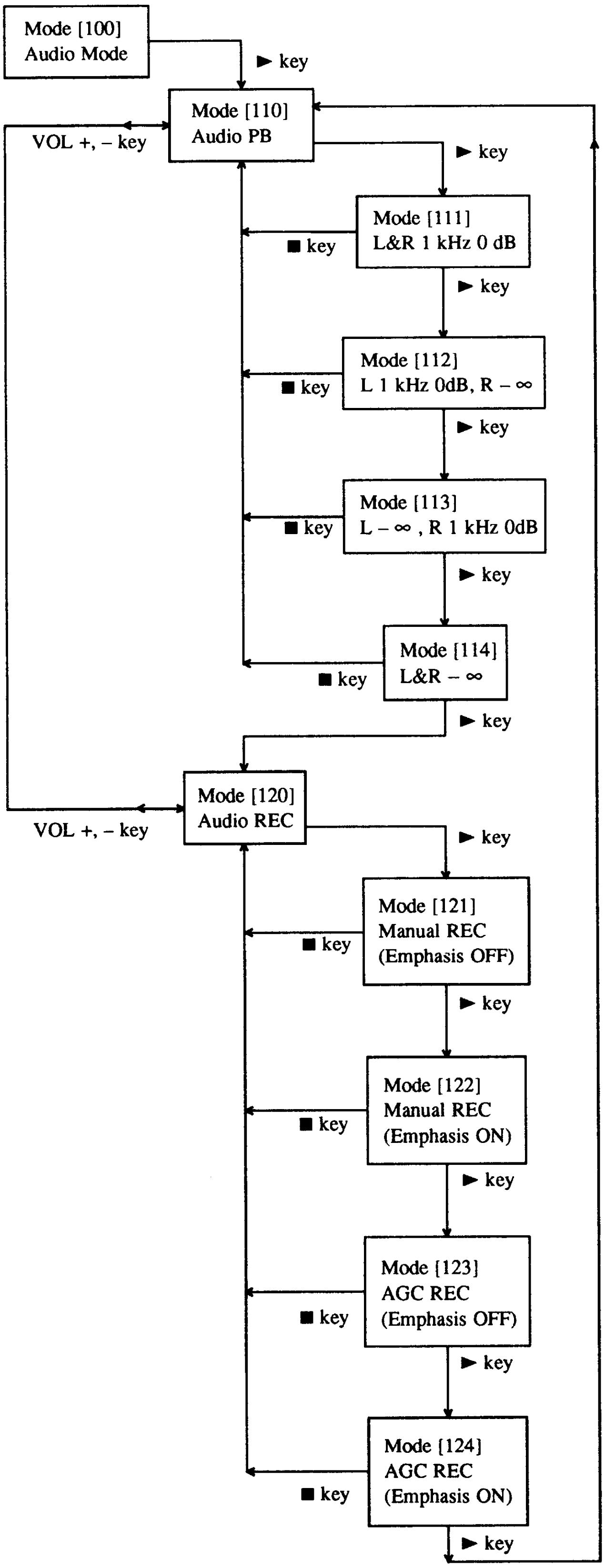

Cluster value
RCHECK 032
073

5. Press the ■ key. The BETA REC mode will be set again.

AUDIO MODE

- To set the audio mode, set the test mode, and set the mode display to 100 using the VOL +, – key.
- To set other modes, press the VOL +, – key.

- **Audio Mode Structure**

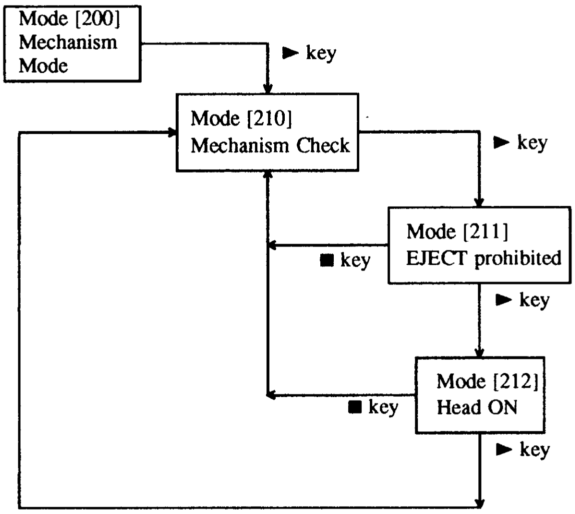

Mode [100]
Audio Mode
▶ key
Mode [110]
Audio PB
VOL +, – key
▶ key
Mode [111]
L&R 1 kHz 0 dB
■ key
▶ key
Mode [112]
L 1 kHz 0dB, R – ∞
■ key
▶ key
Mode [113]
L – ∞ , R 1 kHz 0dB
■ key
▶ key
Mode [114]
L&R – ∞
■ key
▶ key
Mode [120]
Audio REC
VOL +, – key
▶ key
Mode [121]
Manual REC
(Emphasis OFF)
■ key
▶ key
Mode [122]
Manual REC
(Emphasis ON)
■ key
▶ key
Mode [123]
AGC REC
(Emphasis OFF)
■ key
▶ key
Mode [124]
AGC REC
(Emphasis ON)
■ key
▶ key

- When the II key is pressed when the mode number is [111], [112], or [113], the buzzer will sound for approximately 1 second. (When the buzzer sounds, it indicates that the Lch and Rch can be muted. The channels can also be switched even if the II key is not pressed.)
- When the VOL +, – key is pressed when the mode number is [111], [112], or [113], the headphones output volume will move up and down. When the I◀◀ or ▶▶I key is pressed, the headphones output volume will become minimum and maximum.
- When the VOL +, – key is pressed when the mode number is [121] or [122], the recording level will move up and down. When the I◀◀ or ▶▶I key is pressed, the recording level will become minimum and maximum.
- When the VOL +, – key is pressed when the mode number is [123] or [124], the headphones output volume will move up and down. When the I◀◀ or ▶▶I key is pressed, the recording level will become minimum and maximum.
- When the mode number is [121], [122], [123], and [124], the recording LED will be lit.

MECHANISM MODE

- To set the mechanism mode, set the test mode, and set the mode display to 200 using the VOL +, – key.
- When the ►►I or I◄◄ key is pressed, the optical pick-up will move to the external or internal periphery.
- To set other modes, press the VOL +, – key.

• Mechanism Mode Structure


Mode [200]
Mechanism
Mode
► key
Mode [210]
Mechanism Check
► key
Mode [211]
EJECT prohibited
■ key
► key
Mode [212]
Head ON
■ key
► key

POWER MODE

- To set the power mode, set the test mode, and set the mode display to 300 using the VOL +, – key.
- To set other modes, press the VOL +, – key.

• Power Mode Structure

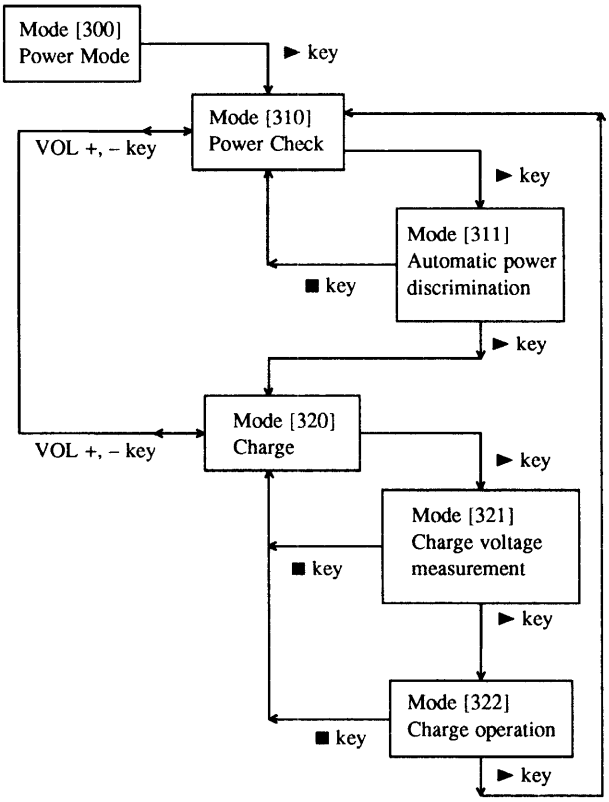

Mode [300]
Power Mode
► key
Mode [310]
Power Check
VOL +, – key
► key
Mode [311]
Automatic power
discrimination
■ key
► key
Mode [320]
Charge
VOL +, – key
► key
Mode [321]
Charge voltage
measurement
■ key
► key
Mode [322]
Charge operation
■ key
► key

TABLE OF DOT AREA DISPLAYS

Mode	Dot Area Display	Mode	Dot Area Display	Mode	Dot Area Display	Mode	Dot Area Display
000	ROM VERSION	036	MO_ALL <Cluster>	100	AUDIO	200	MECHANIZM
010	LD_POWER	040	CDL_TEST	110	AUDIO_PB	210	MECHATEST
011	LD_CD_RD	041	CDL_FOCUS	111	L/R=1K0dB	211	EJECT
012	LD_MO_WR	042	CDL_TRKOF	112	L=1K0dB	212	HEAD_ON
013	LD_MO_RD	043	CDL_AL <Cluster>	113	R=1K0dB		
014	TEMP_MO_W	050	CD_TEST	114	INFI_ZERO	300	PWR_TEST
015	ALLON_MOR	051	CD_FOCUS	120	AUDIO_REC	310	PWR_SUPLY
016	ALLON_CDR	052	CD_TRKOFS	121	DEMP_LINA	311	LI_ION
020	OFFSET	053	LD_CD_RD		DEMP_OPTA		AM3
021	CD_FOKOFS	054	CD_FCS_GA		DEMP_MICA		DC_IN
022	CD_FEOFS	055	CD_TRK_GA	122	LINE_REC	320	CHG_TEST
023	CD_FCBIAS	056	CD_ALL <Cluster>		OPT_REC	321	CHG_AUTO
024	MO_FOKOFS	057	CD_TG_UP		MIC_REC	322	CHG_ON
025	MO_FEOFS	060	CDFG_TEST	123	DEMP_LINM		
026	MO_FCBIAS	062	CDFG_FON		DEMP_OPTM		
030	MO_TEST	063	CDFG_AL1		DEMP_MICM		
031	MO_FOCUS	070	REC_TEST	124	LINE_MANU		
032	MO_TRKOFS	071	BETA_R <Cluster>		OPT_MANU		
033	MOW_EFBA	072	RSHOCK <Cluster>		MIC_MANU		
034	MO_FCS_GA	073	RCHECK <Cluster>				
035	MO_TRK_GA						

OTHER DISPLAYS

- During the test mode, the displays shown for the detection switch of the disc are as follows.

	Segment Area Display
Disc low reflectance rate detection	↪
Disc present/absent detection	SHUF
Non-erasable switch detection	1
OPEN/CLOSE switch detection	OF*

* : Displayed at the dot area when OPEN in mode number [010].

SECTION 5

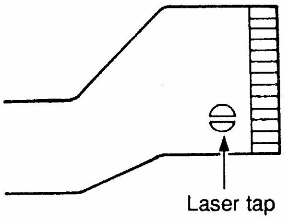
ELECTRICAL ADJUSTMENTS

LASER DIODE EMISSION CHECKING PROCAUTIONS

When checking the laser diode emission during adjustments, never check it from directly above as this can be blinding.

OPTICAL PACK-UP BLOCK (KMS-190A) USING PRECAUTIONS

As the laser diode in the optical pick-up is easily damaged by static electricity, make a solder bridge on the laser tap of the flexible board when using it. Also carry out thorough anti-static electricity measures. Handle the flexible board carefully as it damages easily.



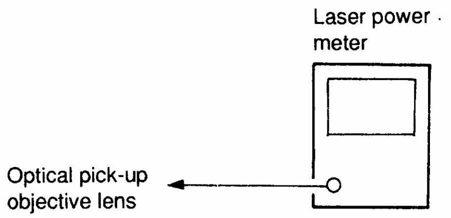
Optical pickup flexible board.

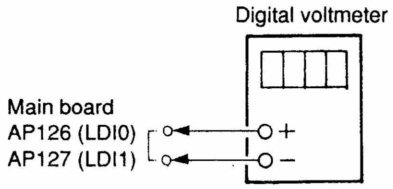
ADJUSTING PRECAUTIONS

1) To perform adjustments, set the test mode.
2) After completing adjustments, exit the test mode.
3) Use the following jigs and measurement tools.
    - CD test disc TDYS-1 (Parts No : 4-963-646-01)
    - SONY MO disc available on the market.
    - LPM-8001 laser power meter (Parts No. : J-2501-046-A)
    - MDPE-1 error rate counter (Parts No. : J-2501-047-A)
    - Oscilloscope (Above 40 MHz band. Measure after calibrating the probe.)
    - Digital voltmeter
    - Thermometer
4) Unless specified otherwise, supply a power of DC6V to the DC IN 6V jack.
5) Positions of switch and knob
    - HOLD switch...OFF(Opposite —►)
    - AVLS switch (remote controller)...OFF

LASER POWER ADJUSTMENT

Connection :



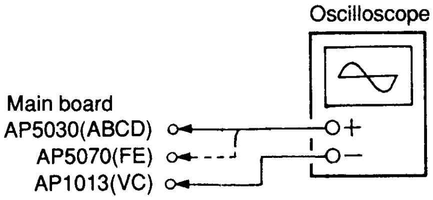


Adjusting Method :

1. Set the servo mode of the test mode (Mode display : 000).
2. Press the ► key and set the laser power adjustment mode (Mode display : 010).
3. Press the I◄◄ key and move the optical pick-up to the inner-most periphery.
4. Open the lid and set the laser power meter above the optical pick-up objective lens.
5. Press the ► key and set the laser CD read adjustment mode (Mode display : 011).
6. Check that the laser power meter reads 0.4 ± 0.1 mW.
7. Press the ► key and set the laser MO write adjustment mode (Mode display : 012).
8. Press the VOL +, – key so that the laser power meter reads 6.8 ± 0.05 mW.
9. Press the II key and fix the adjustment data.
10. Check that the voltage between AP126 (LDI0) and AP127 (LDI1) is below 600 mV.
11. Press the ► key and set the laser MO read adjustment mode (Mode display : 013).
12. Press the VOL +, – key so that the laser power meter reads 0.85 ± 0.05 mW.
13. Press the II key and fix the adjustment data.
14. Check that the voltage between AP126 (LDI0) and AP127 (LDI1) is below 350 mV.
15. Press the ► key and set the temperature compensation adjustment mode (Mode display : 014).
16. Measure the temperature of the periphery of the main board using the thermometer.
17. Press the VOL +, – key so that the value measured shown at the LCD segment becomes ± 1.
18. Press the II key and fix the adjustment data.
19. Release the test mode.

OFFSET ADJUSTMENT

Connection :

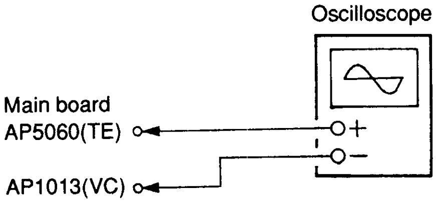


Adjusting Method :

1. Set the servo mode of the test mode (Mode display : 000).
2. Press the ►key and VOL + key, and set the offset adjustment mode (Mode display : 020).
3. Press the ►key and set the CD FOK offset adjustment mode (Mode display : 021).
4. Press the VOL +, − key so that the voltage between AP5030 (ABCD) and AP1013 (VC) becomes 0 ± 50 mV.
5. Press the II key and fix the adjustment data.
6. Press the ► key and set the CD FE offset adjustment mode (Mode display : 022).
7. Press the VOL +, − key so that the voltage between AP5070 (FE) and AP1013 (VC) becomes 0 ± 50 mV.
8. Press the II key and fix the adjustment data.
9. Press the ► key and set the CD focus bias offset adjustment mode (Mode display : 023).
10. Press the VOL +, − key so that the voltage between AP5070 (FE) and AP1013 (VC) becomes 0 ± 50 mV.
11. Press the II key and fix the adjustment data.
12. Press the ► key and set the MO FOK offset adjustment mode (Mode display:024).
13. Press the VOL +, − key so that the voltage between AP5030 (ABCD) and AP1013 (VC) becomes 0 ± 50 mV.
14. Press the II key and fix the adjustment data.
15. Press the ► key and set the MO FE offset adjustment mode (Mode display : 025).
16. Press the VOL +, − key so that the voltage between AP5070 (FE) and AP1013 (VC) becomes 0 ± 50 mV.
17. Press the II key and fix the adjustment data.
18. Press the ► key and set the MO focus bias offset adjustment mode (Mode display : 026).
19. Press the VOL +, − key so that the voltage between AP5070 (FE) and AP1013 (VC) becomes 150 ± 50 mV.
20. Press the II key and fix the adjustment data.
21. Release the test mode.

MO TRAVERSE ADJUSTMENT

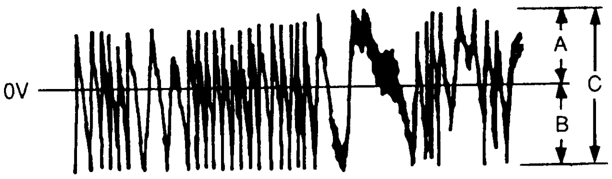
Connection :



Adjusting Method :

1. Set the servo mode of the test mode (Mode display : 000).
2. Press the ►key and VOL + key (twice), and set the MO playback adjustment mode (Mode display : 030).
3. Press the ►►I or I◄◄ key and move the optical pick-up near the center.
4. Insert a MO disc. (Any available on the market.)
5. Press the ► key and after the focus search turns on, set the CLV ADIP mode (Mode display : 031). (After the focus is turned on, the MO tracking offset adjustment mode is set (Mode display : 032).)
6. Slide the REC key and set the EF balance adjustment mode (Mode display : 033).
7. Press the VOL +, − key so that the traverse waveform of AP5060 (TE) becomes symmetrical in respect to 0V.

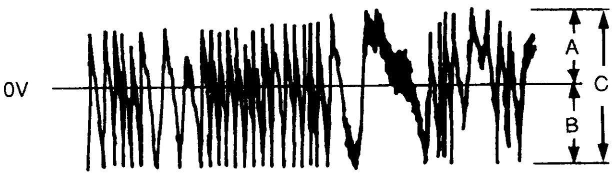
(Traverse Waveform)



Specification : A=B, C≧2.0 Vp-p

8. Press the II key and fix the adjustment data.
9. Check that this traverse level is above 2.0 Vp-p.
10. Slide the REC key and set the MO tracking offset adjustment mode (Mode display : 032).
11. Press the VOL +, − key so that the traverse waveform of AP5060 (TE) becomes symmetrical in respect to 0V.

(Traverse Waveform)



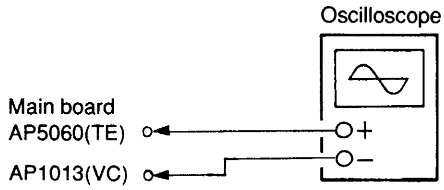
Specification : A=B, C≧2.0 Vp-p

12. Press the II key and fix the adjustment data.
13. Check that this traverse level is above 2.0 Vp-p.
14. Repeat steps 6 to 13 until the specification is satisfied.
15. Press the ■ key.
16. Release the test mode.

Note : The data will be erased if a recorded disc is used for this adjustment.

MO P-TOC TRAVERSE ADJUSTMENT

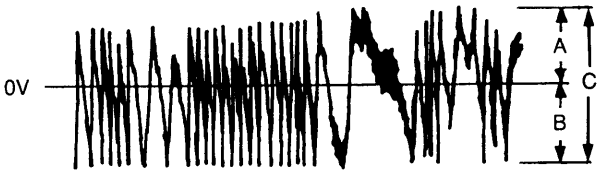
Connection :



Adjusting Method :

1. Set the servo mode of the test mode (Mode display : 000).
2. Press the ►key and VOL + key (three times), and set the MO P-TOC adjustment mode (Mode display : 040).
3. Insert a MO disc. (Any available on the market.)
4. Press the ► key and after the focus search turns on, set the CLV EFM mode (Mode display : 041). (After the focus is turned on, the MO P-TOC tracking offset adjustment mode is set (Mode display : 042).)
5. Press the VOL +, – key so that the traverse waveform of AP5060 (TE) becomes symmetrical in respect to 0V.

(Traverse Waveform)

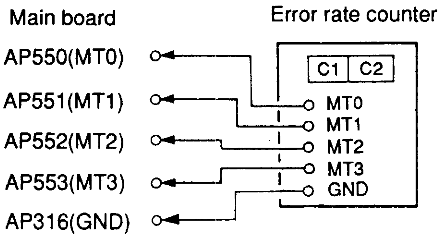


Specification : A=B, C≧2.0 Vp-p

6. Press the II key and fix the adjustment data.
7. Check that this traverse level is above 2.0 Vp-p.
8. Press the ■ key.
9. Release the test mode.

MO ERROR RATE CHECK

Connection :

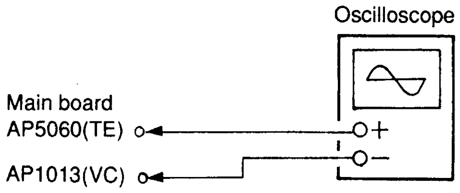


Checking Method :

1. Set the servo mode of the test mode (Mode display : 000).
2. Press the ►key and VOL + key (six times), and set the BETA REC mode (Mode display:070).
3. Press the ►►I or I◄◄ key and move the optical pick-up near the center.
4. Insert a MO disc. (Any available on the market.)
5. Press the ► key and set the 32-cluster BETA REC mode (Mode display : 070). (After the focus search is turned on and the 32-cluster is accessed, continuous recording is started.)
6. Record for approximately 10 seconds.
7. Press the ► key and set the 32-cluster PLAY mode (Mode display : 073).
8. Check that the error rate (C1) shown on the error rate counter is below 100 and there is no compensation (C2).
9. Press the ■ key.
10. Release the test mode.

CD TRAVERSE ADJUSTMENT

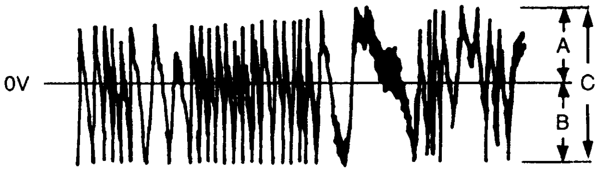
Connection :



Adjusting Method :

1. Set the servo mode of the test mode (Mode display : 000).
2. Press the ▶ key and VOL +, − key (four times), and set the CD playback adjustment mode (Mode display : 050).
3. Press the ▶▶| or |◀◀ key and move the optical pick-up near the center.
4. Insert the CD test disc (TDYS-1).
5. Press the ▶ key and after the focus search turns on, set the CLV EFM mode (Mode display : 051). (After the focus is turned on, the CD tracking offset adjustment mode is set (Mode display : 052).)
6. Press the VOL +, − key so that the traverse waveform of AP5060 (TE) becomes symmetrical in respect to 0V.

(Traverse Waveform)

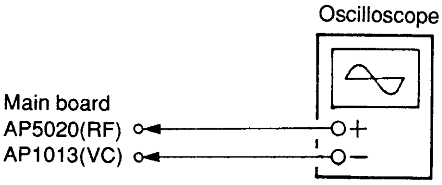


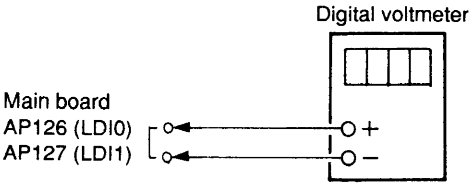
Specification : A=B, C≧2.0 Vp-p

7. Press the ❚❚ key and fix the adjustment data.
8. Check that this traverse level is above 2.0 Vp-p.
9. Press the ■ key.
10. Release the test mode.

CD RF LEVEL ADJUSTMENT

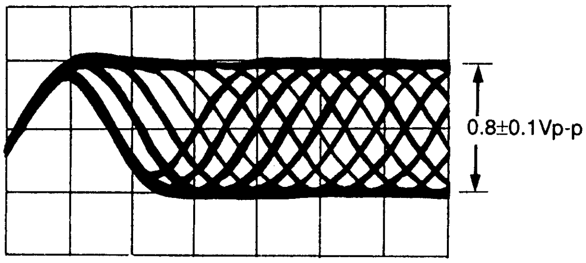
Connection :





Adjusting Method :

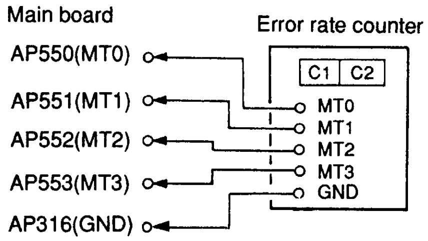
1. Set the servo mode of the test mode (Mode display : 000).
2. Press the ▶key and VOL + key (four times), and set the CD playback adjustment mode (Mode display : 050).
3. Press the ▶▶| or |◀◀ key and move the optical pick-up near the center.
4. Insert the CD test disc (TDYS-1).
5. Press the ▶ key (twice) and set the CD RF level adjustment mode (Mode display : 053).
6. Press the VOL +, − key so that RF level of AP5020 (RF) becomes 0.8 ± 0.1 Vp-p.



7. Press the ❚❚ key and fix the adjustment data.
8. Check that the voltage between AP126 (LDI0) and AP127 (LDI1) is below 300 mV.
9. Press the ■ key.
10. Release the test mode.

CD ERROR RATE CHECK

Connection :

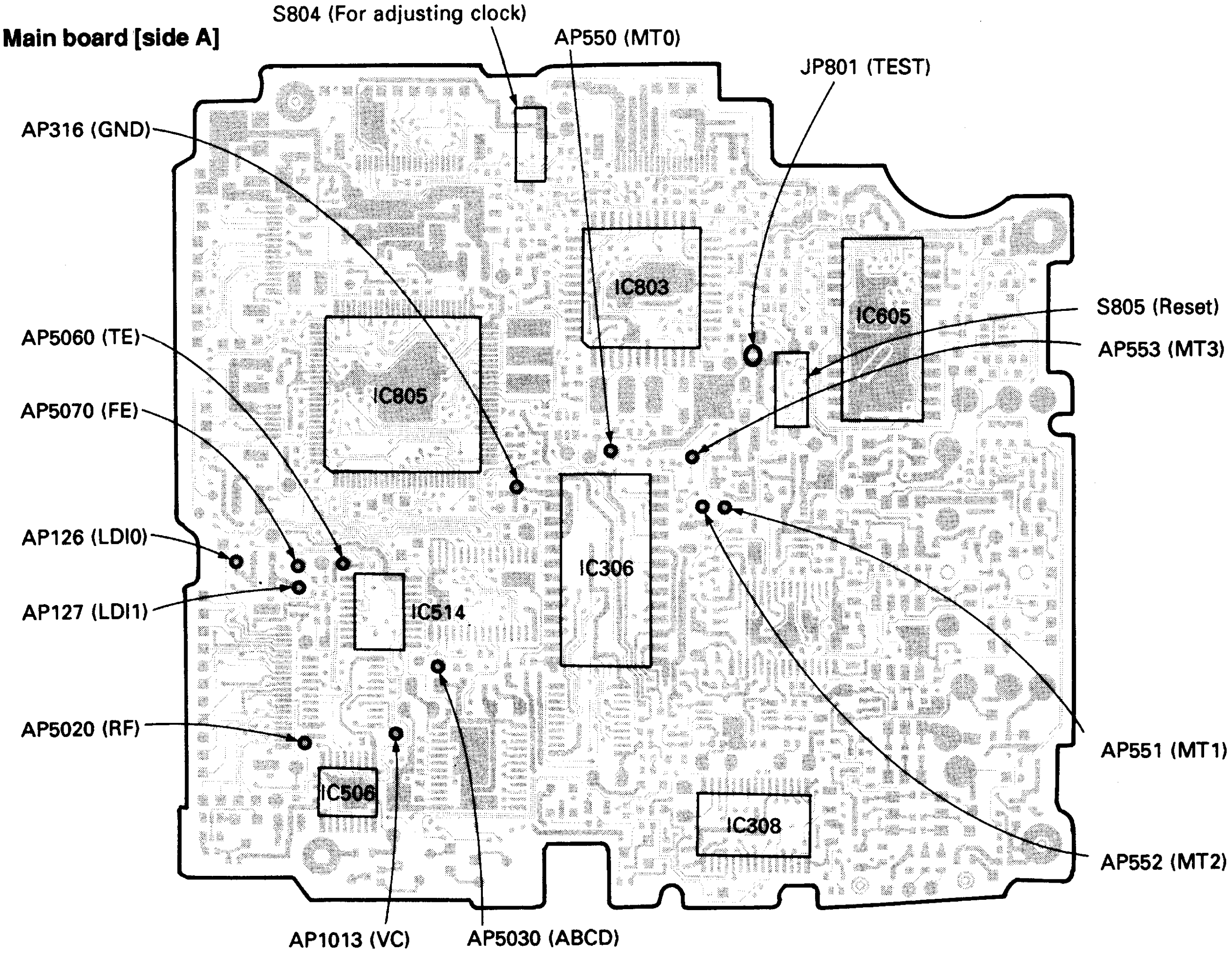

Main board
Error rate counter
AP550(MT0)
AP551(MT1)
AP552(MT2)
AP553(MT3)
AP316(GND)
C1
C2
MT0
MT1
MT2
MT3
GND

Checking Method :

1. Set the servo mode of the test mode (Mode display : 000).
2. Press the ►key and VOL + key (four times), and set the CD playback adjustment mode (Mode display : 050).
3. Press the ►►I or I◄◄ key and move the optical pick-up near the center.
4. Insert the CD test disc (TDYS-1).
5. Press the ► key (five times) and set the CD focus bias variable mode (Mode display : 056).
6. Check that the error rate (C1) shown on the error rate counter is below 100 and there is no compensation (C2).
7. Press the ■ key.
8. Release the test mode.

ADJUSTING/CONNECTING POINTS

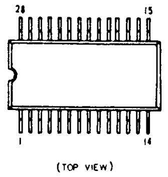
Main board [side A]


S804 (For adjusting clock)
AP550 (MT0)
JP801 (TEST)
AP316 (GND)
S805 (Reset)
AP553 (MT3)
AP5060 (TE)
AP5070 (FE)
AP126 (LDI0)
AP127 (LDI1)
AP5020 (RF)
AP551 (MT1)
AP552 (MT2)
AP1013 (VC)
AP5030 (ABCD)
IC803
IC605
IC805
IC306
IC514
IC506
IC308

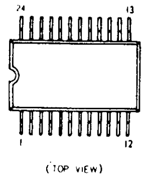
SECTION 6
DIAGRAMS

6-1. SEMICONDUCTOR LEAD LAYOUTS

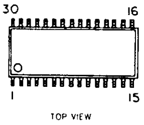
AK4502-VS-E1


28
15
1
14
(TOP VIEW)

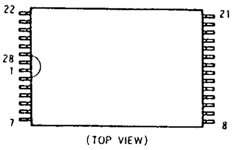
CXA1380N
CXA8027N


24
13
1
12
(TOP VIEW)

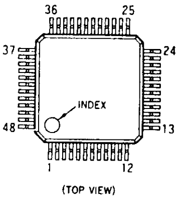
CXA1497N
CXD8498N-ELL2000
LA4805V-TLM


30
16
1
15
TOP VIEW

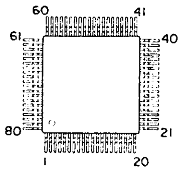
CXA1602R


22
21
28
1
7
8
(TOP VIEW)

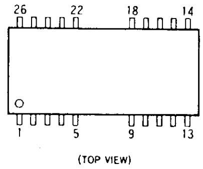
CXA1861R


36
25
37
24
INDEX
48
13
1
12
(TOP VIEW)

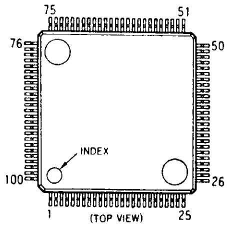
CXD2525R-1
CXD2526AR
CXD2531BR


60
41
61
40
80
21
1
20

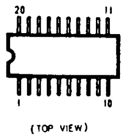
CXK41V4400ATM-10


26
22
18
14
1
5
9
13
(TOP VIEW)

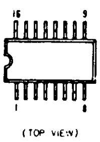
CXP81848-603R


75
51
76
50
INDEX
100
26
1
(TOP VIEW)
25

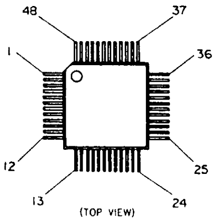
DS1267-50
DS1267E-10
MC74ACT540DTEL
MPC1730VMEL


20
11
1
10
(TOP VIEW)

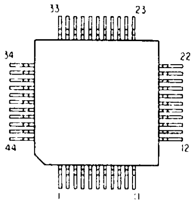
MB88347ATFV-EF


16
9
1
8
(TOP VIEW)

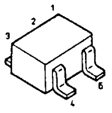
MB89133A-PFM-170


48
37
1
36
12
25
13
24
(TOP VIEW)

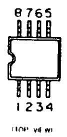
MPC1718FU


33
23
34
22
44
12
1
11

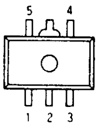
NJM2107F
NJM2107F
S-80725SL-AN
S-80745SL-A9
TC4S66F
TC7S04FU
TC7S08FU
TC7S66FU



NJM4580E-D
RS5RJ3720B
TC4W53FU
TLV2362IPW-ELM1500

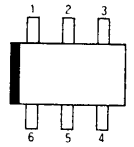

8 7 6 5
1 2 3 4
(TOP VIEW)

S-2900AUT

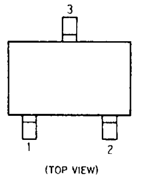


1. CONT
2. Vss
3. ON/OFF
4. VIN
5. VOUT

TK11230MTL
TK11245AMTL
TK15210MTL

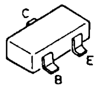


XC61AN1102MR
XC61AN1902MR
XC62AP3102MR
XC62AP3201MR

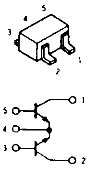

3
1
2
(TOP VIEW)

1 : VSS
2 : OUT
3 : VDD

DTA114YE
DTA144EE
DTA144EE
DTA144EU
DTC114YE
DTC143TE
DTC144EE
DTC144TE
2SA1774R
2SC4617TL-QR
2SD2228-D44D45

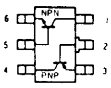


FMG2

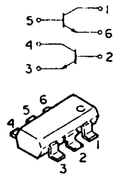

5
4
3
1
2
5
4
3
1
2

1 Tr1 : Collector 1
2 Tr2 : Collector 2
3 Tr2 : Base 2
4 Tr1, 2 : Emitter
5 Tr1 : Base 1

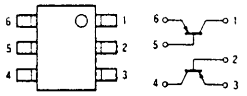
UMD2
UMD3
UMZ1


NPN
PNP
6
5
4
1
2
3

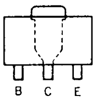
UMH2


5
4
3
1
6
2
6
5
4
3
2
1

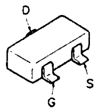
XN4404


6
5
4
1
2
3
6
5
4
1
2
3

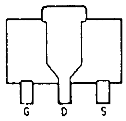
2SB1308-QR



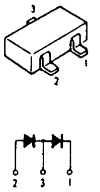
2SJ305
2SK2035



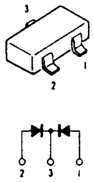
2SK2315TYTR



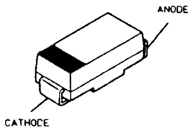
DA221
SB007-03Q
SB007T03Q



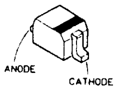
DAN222
KV1450
MA786WK



F1J6TP

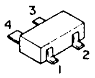

ANODE
CATHODE

MA2S082
MA2S111
MA2S728

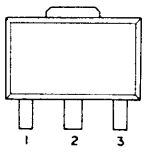

ANODE
CATHODE

MA724

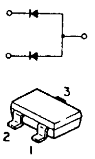
1. CATHODE
2. CATHODE
3. ANODE
4. ANODE



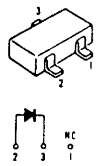
RB110C



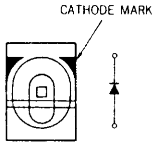
RB715F
RB717F



SB01-05CP



CL-181UR-C-TS


CATHODE MARK

6-2. IC PIN FUNCTIONS

IC601 EFM/ACIR ENCODER/DECODER (CXD2525R-1)

* (3) represents state output and (A) represents analog output in I/O column.

Pin No.	Signal Name	I/O	Function
1	MDP	O (3)	Spindle motor servo control
2	MDS	O (3)	Spindle motor servo control
3	EFMI	I	Playback EFM input
4	ASY	O	Playback EFM full swing output
5	LOCK	O	Spindle servo (CLV) lock monitor. "H": Lock
6	VCOO	O	EFM decoder analog PLL oscillation output (196 Fs=8.6436 MHz)
7	VCOI	I	EFM decoder analog PLL oscillation input (196 Fs=8.6436 MHz)
8	TEST1	I	Test pin. Normally GND
9	PDO	O (3)	EFM decoder analog PLL phase comparison output
10	VSS	–	Digital GND
11	EFMO	O	EFM output during recording
12	ATER	O	ADIP CRC flag output. "H": Error
13	CNIN	I	Track jump number count signal input
14	SENS	O (3)	Internal status output for serial bus address
15	SYPL	I	SQSY, ADSY, DQSY polarity switching input. Active high when "H"
16	FILO	O (A)	Digital PLL master PLL filter output
17	FILI	I	Digital PLL master PLL filter input
18	PCO	O (3)	Digital PLL master PLL phase comparison output
19	AVSS	–	Analog GND
20	CLTV	I	Digital PLL master PLL VCO control voltage input
21	AVDD	–	Analog power supply
22	XRST	I	System reset input. Active low
23	REC	I	"L": Decoder, "H": Encoder
24	TEST8	I	Test pin. Normally GND
25	SCLK	I	Serial bus clock input
26	XLAT	I	Serial bus latch input
27	SWDT	I	Serial bus write data input
28	SRDT	O (3)	Serial bus read data output
29	ADSY	O	ADIP sync output
30	SQSY	O	Subcode Q sync output
31	VDD	–	Digital power supply
32	DQSY	O	Subcode Q sync (SCOR) output of digital in U-bit CD format
33	TEST7	O	Open
34	DTI	I	Recording audio signal input
35	DTO	O (3)	Playback audio signal output. High impedance during recording
36	C2PO	O	C2PO: Playback, D. In-VFLAG: Digital REC, 0: Analog REC
37	BCK	O	2.8224 MHz output (MCLK system)
38	XBCK	O	BCK inversion output (MCLK system)
39	LRCK	O	44.1 kHz (=Fs) (MCLK system)
40	WDCK	O	88.2 kHz (MCLK system)

Pin No.	Signal Name	I/O	Function
41	FS4	O	176.4 kHz (MCLK system)
42	GTOP	O	"H": Releases sync protection window (INPUT EFM SYNC monitor output)
43	XUGFS	O	"L": Unguarded frame sync (INPUT EFM SYNC monitor output)
44	XPLCK	O	EFM decoder PLL clock output (98 Fs=4.3218 MHz)
45	GFS	O	"H": Frame sync OK (INPUT EFM SYNC monitor output)
46	EPDO	O (3)	EFM encoder external PLL phase comparison output Frequency: Low → "H"
47	RFCK	O	7.35 kHz output (MCLK system)
48	EVCI	I	EFM encoder external PLL oscillation input (196 Fs=8.6436 MHz)
49	EVCO	O	EFM encoder external PLL oscillation output (196 Fs=8.6436 MHz)
50	VSS	–	Digital GND
51	MCLK	O	22.579 MHz output
52	XTAI	I	Crystal oscillation input (512 Fs=22.5792 MHz)
53	XTAO	O	Crystal oscillation output (512 Fs=22.5792 MHz)
54	TEST9	I	Fixed at "L"
55	MVCI	I	Digital in PLL oscillation input (512 Fs=22.5792 MHz)
56	MVCO	O	Digital in PLL oscillation output (512 Fs=22.5792 MHz)
57	TEST2	O	Fixed at "open"
58	DIPD	O (3)	Digital in PLL phase comparison output Frequency: Low → "H"
59	RAOF	O	RAM overflow output (decoder monitor output)
60	MT3	O	Correction status monitor output during playback
61	MT2	O	Correction status monitor output during playback
62	MT1	O	Correction status monitor output during playback
63	MT0	O	Correction status monitor output during playback
64	WFCK	O	7.35 kHz (EFM decoder PLL system during playback, EFM encoder PLL system during recording)
65	DIN	I	Digital audio input
66	MD2	I	Digital audio out ON/OFF. "H": ON
67	DOUT	O	Digital audio output
68	DIDT	O	Audio data output for digital audio input
69	DODT	I	16-bit data input for digital audio output
70	DOVF	I	Validity flag input for digital audio
71	VDD	–	Digital power supply
72	TEST3	I	Fixed at "L"
73	TEST4	O	Fixed at "open"
74	TEST5	I	Fixed at "L"
75	TEST6	I	Fixed at "L"
76	FMCK	I	ADIP read clock input (6.3 kHz) (TTL Schmidt input)
77	FMDT	I	ADIP data input (TTL schmidt input)
78	ADFG	I	ADIP carrier signal input (20.05 kHz) (TTL schmidt input)
79	FSW	O (3)	Spindle motor output filter switching output. "Z": CLV-P, "L": Others
80	NON	O	Spindle motor ON/OFF control output. "H": ON

Note:
- XUGFS is a Frame Sync (negative pulse) created from EFM signal. This signal has not been sync protected.
- As for XPLCK, PLL is adjusted so that EFM PLL clock inversion and falling edge coincide with its changing point.
- GFS becomes "H" when Frame Sync coincides with insertion protection timing.
- C2PO represents data error status.
- RAOF is generated when 32 kRAM exceeds ± 4F jitter margin.

IC602 SHOCK PROOF MEMORY CONTROLLER (CXD2526AR)

Pin No.	Signal Name	I/O	Function
1	A16	O	SRAM address bus A16 when RMSL="H", WFOVF when "L" (Note)
2	A17	O	SRAM address bus A17 when RMSL="H", WDTM when "L" (Note)
3	A18	O	SRAM address bus A18 when RMSL="H", ZERO when "L" (Note)
4	A19	O	SRAM address bus A19 when RMSL="H", MDTSC when "L" (Note)
5	A20	O	SRAM address bus A20 when RMSL="H", CMPSY when "L" (Note)
6	LRCK	I	LRCK input from EFM encoder/decoder
7	BCK	I	BCK input from EFM encoder/decoder
8	C2PO	I	C2PO input from EFM decoder
9	DATA	I/O	Input/output data from decoder during playback and to encoder during recording
10	VSS	–	GND
11	TEST	I	Test pin. Normally fixed at "L"
12	XRST	I	Reset input. "L": Reset
13	MIN	I	Monitor signal input for external input. Inputs a desired monitor signal
14	SRDT	(HiZ) O	Microprocessor serial data output. "Hi-z" when CXD2526 read register is not selected
15	SWDT	I	Microprocessor serial data input
16	XSLT	I	Microprocessor serial data latch signal input
17	SCK	I	Microprocessor serial data shift clock input
18	SCTX	I	Data output enable signal input during recording mode
19	RCPB	I	"L": Playback mode, "H": Recording mode
20	WRMN	I	"H": Write mode, "L": Monitor mode
21	SBMN	I	"H": Records input signal according to SDCT, "L": Records according to DCT
22	XINT	O	Interruption request output. "L" when interruption status occurs
23	MDSY	O	Input data MD sync detection signal
24	MEMFUL	O	"H" when main data area becomes full with data
25	MEMEMP	O	"H" when main data area is empty
26	UNDER	O	"H" when RMS < THUND
27	OVER	O	"H" when RMS ≧ THOVR
28	ERWR	O	"H" when data which C2PO is effective is written into RAM
29	BTOV4	O	"H" when BCT ≧ 400 (Hex)
30	TXST	O	"H" during data transfer
31	VDD	–	System power supply
32	BUSY	I/O	"H": RAM access
33	ZZ2	I	Test signal. Fixed at "L"
34	ZZ1	I	Test signal. Fixed at "L"
35	ZZ0	I	Test signal. Fixed at "L"
36	XALT	O	Data ready or latch signal to CXD2527
37	ADT1	I	Data input from CXD2527
38	ADTO	O	Data output to CXD2527
39	ACK	O	Data input/output clock output to CXD2527
40	AC2	O	Output data C2PO output to CXD2527
41	XRQ	I	Data request input signal from CXD2527
42	SDCK	I	External sub data I/F shift clock input
43	SBDT	I/O	External sub data I/F data output during playback mode, data input during recording mode

Pin No.	Signal Name	I/O	Function
44	XWT	O	External sub data I/F wait signal. Clock for reading a new data should not be transferred when "L"
45	SRDY	O	External sub data I/F access enable signal. Ignores clock for sub data R/W when "H"
46	MCK	O	128 fs output
47	F256	O	256 fs output
48	XTLO	O	System clock output (22.5792 MHz)
49	XTLI	I	System clock input (22.5792 MHz)
50	VSS	–	GND
51	TEST	I	Fixed at "L"
52	RMSL	I	External RAM select signal. "H": SRAM, "L": DRAM
53	ERR	I/O	EXTC2R="H": C2PO input
54	D7	O	SRAM data bus D7 when RMSL="H", Test signal when "L"
55	D4	I/O	RAM data bus D4 when RMSL="H", Test signal when "L"
56	D0	I/O	RAM data bus D0
57	D1	I/O	RAM data bus D1
58	D3	I/O	RAM data bus D3
59	D2	I/O	RAM data bus D2
60	XCAS	I/O	RMSL="L": DRAM $\overline{\text{CAS}}$ output, "H": Data bus D6
61	XOE	O	RAM output enable
62	A10	O	RAM address bus A10
63	XWE	O	RAM write enable
64	XRAS	I/O	DRAM $\overline{\text{RAS}}$ output when RMSL="L", Data bus D5 when "H"
65	A11	O	RAM address bus A11
66	A9	O	RAM address bus A9
67	A0	O	RAM address bus A0
68	A1	O	RAM address bus A1
69	A2	O	RAM address bus A2
70	A3	O	RAM address bus A3
71	VDD	O	System power supply
72	A8	O	RAM address bus A8
73	A7	O	RAM address bus A7
74	A6	O	RAM address bus A6
75	A5	O	RAM address bus A5
76	A4	O	RAM address bus A4
77	A12	O	RAM address bus A12 when RMSL="H", CS output when "L"
78	A13	O	RAM address bus A13 when RMSL="H", SYOK output when "L"
79	A14	O	SRAM address bus A14 when RMSL="H", WFFUL when "L" (Note)
80	A15	O	SRAM address bus A16 when RMSL="H", RFEMP when "L" (Note)

Note: WFOVF: "H" When write FIFO becomes overflow.
WDTM: Outputs window timing within DI block.
ZERO: Outputs "H" when BCT=0.
MDTSC: "H" when input data header selector becomes 00 to IF, "L" when others.
CMPSY: Insertion sync timing
WFFUL: "H" when write FIFO becomes full.
RFEMP: "H" when read FIFO becomes empty.

IC803 SUB SYSTEM CONTROL (MB89133A-PFM-170)

Pin No.	Signal Name	I/O	Function
1	AVCC	–	3.7V
2	$\overline{\text{RST}}$	I	Reset signal
3	MODE0	I	Mode setting (Connected to GND)
4	MODE1	I	
5	X0	I	System clock (4.19 MHz)
6	X1	O	
7	VCC	–	3.1V
8	X0A	I	Time clock (32.768 kHz)
9	X1A	O	
10	CE	O	Chip enable signal to 3.7V regulator
11	MRST	O	Reset signal to main microprocessor
12		O	Not used
13	PCONT	O	DC-DC converter ON/OFF control. "H": ON
14	CHG	O	Charge ON/OFF control. "H": ON
15		O	Not used
16	BATCHK	O	Battery voltage check switch ON/OFF control. "H": ON
17	PMUTE	O	Not used
18	$\overline{\text{TEST}}$	I	Test mode setting. "L": Test mode
19	VSS	–	GND
20	3.5V	I	External power supply present/absent detection. "H": Present
21	OP/$\overline{\text{CL}}$	I	OPEN/CLOSE switch input. "H": Open
22	$\overline{\text{PACK IN}}$	I	Disc present/absent detection. "H": Present
23	AVLSPB	I	Not used
24	CLOCK	I	CLOCK SET key input
25	AVLSI	I	Headphone remote controller AVLS switch input
26	$\overline{\text{5010}}$	I	Fixed at "L" in this unit
27	$\overline{\text{4.5V}}$	I	External power supply 4.5V present/absent detection. "L": Present
28		O	Not used
29	$\overline{\text{BOOST}}$	I	BASS BOOST key input
30	$\overline{\text{PLAY}}$	I	PLAY key input
31	$\overline{\text{RECKEY}}$	I	REC key input
32	$\overline{\text{HOLD}}$	I	HOLD switch input. "L": ON
33	POK	O	Laser power OK signal output
34		O	Not used
35	BEEP	O	Headphone buzzer output
36	WP2	I	Key wake-up input
37	WP1	I	Wake-up input for power supply and disc detecting
38	SLVREQ	I	Request signal from main microprocessor
39	KEYON	O	Key of remote controller reception switch. "H": ON
40	SDO1	I	Serial data from main microprocessor
41	SDI1	O	Serial data to main microprocessor
42	SCK1	I	Serial clock from main microprocessor
43	AVSS	–	GND
44	AVR	–	Reference voltage
45	KEY0	I	Unit key input (A/D input)
46	KEY1	I	Headphones remote controller key input (A/D input)
47	BATMNT	I	Rithium ion battery – terminal voltage input (A/D input)
48	UNREG	I	Power supply voltage input (A/D input)

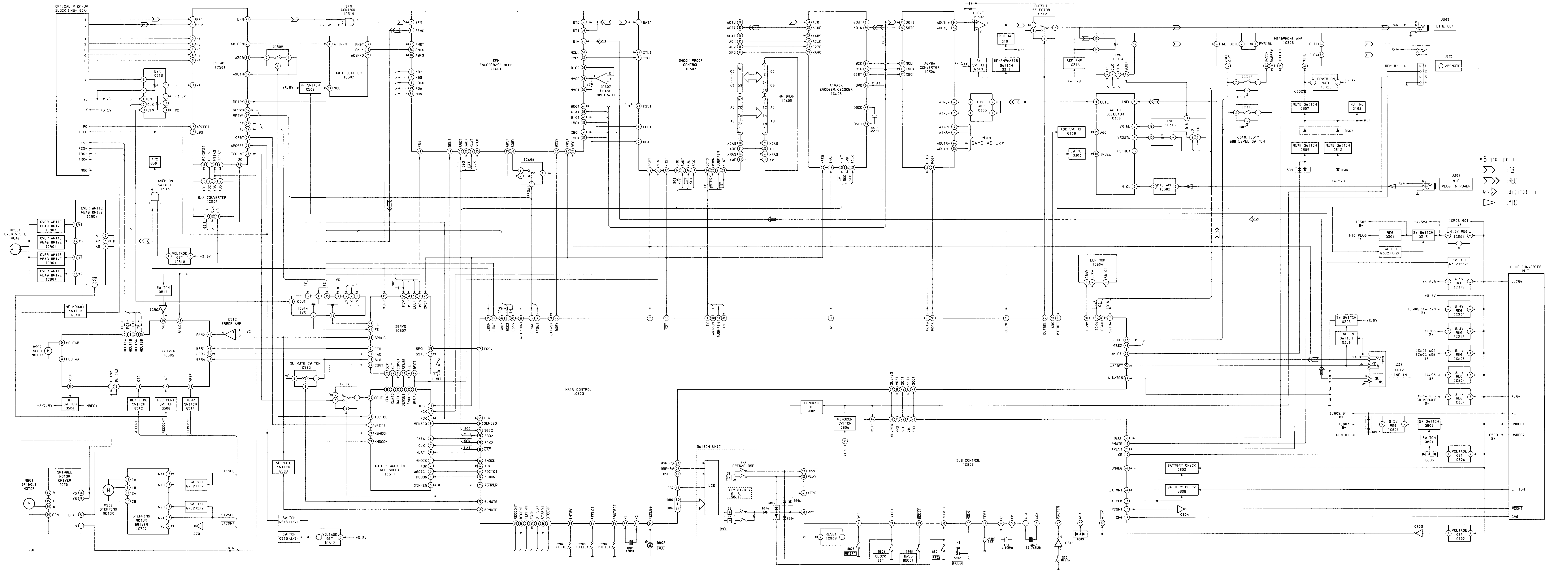
IC805 MAIN SYSTEM CONTROL (CXP81848-603R)

Pin No.	Signal Name	I/O	Function	Connection
1	TX	O	Data output enable signal during REC. “L”: Active	
2	REC	O	“H”: REC mode, “L”: PLAY mode	
3	RFSW0	O	“H”: High reflectance disc “L”: Low reflectance disc SW0 / SW1 / H / H / PREMASTER L / H / PTOC L / L / MO	CXA1861R
4	RFSW1	O	“H”: PIT area “L”: GROOVE area	
5	MODON	O	High frequency module ON/OFF control. “H”: ON	CXD8498N
6	AGCTCI	O	RF AGC amplifier time constant control “L” when WRITE ⟷ READ laser power switching (approx. 30 msec) and when focus search (until focus is successful)	CXD8498N
7	SDIO4	O	Serial data to EVR (IC314, IC315) and EEPROM	
8 to 10			Not used	
11	INSL	O	Digital input/analog input switching. “H”: Digital input	CXD2531AR
12			Not used	
13	DB7	I/O	Data BIT7 to LCD driver and BUSY check	
14 to 20	DB6 to DB0	O	Data BIT6 to BIT0 to LCD driver	
21	DSP-E	O	Enable signal to LCD driver	
22	DSP-RW	O	READ/WRITE signal to LCD driver	
23	DSP-RS	O	Display register select signal to LCD driver	
24	ASYMUTE	O	ASY reference voltage muting during track jump (MO disc only) (Not used)	
25	LDON	O	Laser ON signal. ’H”: ON	
26	LOAD	O	Load signal to EVR (IC506)	
27	SLVREQ	O	Request signal to sub-microprocessor	MB89133A
28			Not used	
29	$\overline{\text{XSHKEN}}$	O	Enable signal to REC shock detection IC	CXD8948N
30	$\overline{\text{LAT}}$	O	Latch signal to REC shock detection IC	CXD8948N
31	$\overline{\text{STCONT}}$	O	Stepping motor control. “L”: ON	
32	ADIPCONT	O	Servo system power supply ON/OFF control. “L”: ON	
33	RECCONT	O	REC driver control. “L”: ON	
34	RECLED	O	REC LED control. “L”: ON	
35			Not used	
36	DTCONT	O	Dead time control	MPC1718FU
37	MP		Connected to GND	
38	$\overline{\text{MRST}}$	I	Reset signal from sub-microprocessor	MB89133A
39	VSS	–	GND	
40	X1	I	System clock (12 MHz)	
41	X2	O		
42	$\overline{\text{CSO}}$		Connected to 3.1V	
43	SDI1	I	Serial data from sub-microprocessor	MB89133A
44	SDO1	O	Serial data to sub-microprocessor	MB89133A
45	SCK1	O	Serial clock to sub-microprocessor	MB89133A

Pin No.	Signal Name	I/O	Function	Connection
46	OUTSEL	O	REC monitor signal switching	
47	DBB1	O	DBB (dynamic bass boost) control	
48	DBB2	O		
49			Not used	
50	AVSS	–	GND	
51	AVREF	–	3.1V	
52	AVDD	–		
53	SHOCK	I	Shock detection signal during REC	
54	SENSEO	I	SENSE signal	CXD2525R-1, CXD8498N
55	FOK	I	Focus OK signal	CXA1861R
56	$\overline{\mathrm{JACDET}}$	I	LINE IN jack detection signal. "L": Jack insertion	
57			Not used	
58	TEMPMN1	I	Temperature detection (A/D input)	
59	OUTLS	I	Pick-up outer periphery detection (A/D input) (Not used)	
60			Not used	
61	FGIN	I	Spindle FG input	
62	TOK	I	Tracking OK signal	CXD8498N
63	$\overline{\mathrm{MIC\ DET}}$	I	MIC jack detection signal. "L": Jack insertion	
64	DIN/$\overline{\mathrm{AIN}}$	I	Digital in/analog in detection. "H": Digital in	
65	PROTECT	I	Disc write protect switch input. "H": Write protect	
66	REFLCT	I	Disc reflectance detection switch input. "H": Low reflectance disc	
67	$\overline{5010}$/5011	I	Fixed at GND in this unit	
68	INTSW	I	Stepping motor initial position detection switch input	
69	SPMUTE	O	Spindle motor mute signal. "H": Mute	
70	AMUTE	O	Audio mute signal. "H": Mute	
71	DEEMP	O	Audio de-emphasis control. "H": De-emphasis on	
72			Not used	
73	SLMUTE	O	Sled motor mute signal. "H": Mute (PWM output)	
74	FGSV	O	FG servo (PWM output)	
75	DQSY	I	Subcode Q sync of digital in U-bit CD format	CXD2525R-1
76	DATASY	I	ADIP sync/subcode Q sync	CXD2525R-1
77	SDI2	I	Serial data	CXD2525R-1, CXD2526AR
78	SDO2	O	Serial data	CXD2525R-1, CXD2526AR, CXD2531AR, CXD8498N
79	SCK2	I/O	Serial clock	CXD2525R-1, CXD2526AR, CXD2531AR, CXD8498N
80	$\overline{\mathrm{INT}}$	I	Interruption request from shock proof memory controller	CXD2526AR
81	SCK3	O	Serial clock to EVR (IC508, IC513, IC514)	
82	SDO3	O	Serial data to EVR (IC506, IC513, IC514)	
83	CSSV	O	Enable signal to EVR (IC513, IC514)	
84	XT1	I	Not used	
85	XT2	O		

Pin No.	Signal Name	I/O	Function	Connection
86	VSS	–	GND	
87	VDD	–	3.1V	
88	NC	–	Not used	
89	CSAU	O	Chip select signal to EVR (IC314, IC315)	
90	CSNV	O	Chip select signal to EEPROM	
91	$\overline{\text{RST}}$	O	Reset signal	
92	AGC	O	Audio AGC ON/OFF control. "H": ON	
93			Not used	
94	SCK4	O	Serial clock to EVR (IC314, IC315) and EEPROM	
95	ST1 SOU	O	Stepping motor signal	MPC1730VM
96	ST2 SOU	O		
97	PDAD	O	A/D converter power down detect during playback. "H": Power down	AK4502-VS
98	PDDA	O	D/A converter power down detect during recording. "H": Power down	AK4502-VS
99	SUB MAIN	O	"H": Sub data, "L": Main data	CXD2526AR
100	WRTMON	O	"H": Write mode, "L": Monitor mode	CXD2526AR

6-3. BLOCK DIAGRAM


OPTICAL PICK-UP BLOCK (KMS-190A)
RF AMP IC501
EVR IC513
EFM CONTROL IC510
IC505
ADIP DECODER IC502
B+ SWITCH Q502
APC Q501
LASER ON SWITCH IC516
D/A CONVERTER IC506
OVER WRITE HEAD DRIVE IC901
HP901 OVER WRITE HEAD
VOLTAGE DET IC810
SWITCH Q514
HF MODULE SWITCH Q510
IC508
DRIVER IC509
IC512 ERROR AMP
M902 SLED MOTOR
B+ SWITCH Q506
DET TIME SWITCH Q512
REC CONT SWITCH Q508
TEMP SWITCH Q511
IC514 EVR
SERVO IC507
SL MUTE SWITCH IC515
IC808
AUTO SEQUENCER REC SHOCK IC511
SP MUTE SWITCH Q503
SWITCH Q515 (1/2)
SWITCH Q515 (2/2)
VOLTAGE DET IC517
M901 SPINDLE MOTOR
SPINDLE MOTOR DRIVER IC701
M902 STEPPING MOTOR
STEPPING MOTOR DRIVER IC702
SWITCH Q702 (1/2)
SWITCH Q702 (2/2)
Q701
EFM ENCODER/DECODER IC601
IC607 PHASE COMPARATOR
IC606
SHOCK PROOF CONTROL IC602
4M DRAM IC605
ATRACK ENCODER/DECODER IC603
X602 45MHz
AD/DA CONVERTER IC306
L.P.F IC307
OUTPUT SELECTOR IC312
MUTING Q101
B+ SWITCH Q310
DE-EMPHASIS SWITCH Q311
REF AMP IC316
EVR IC314
LINE AMP IC305
Rch SAME AS Lch
AUDIO SELECTOR IC303
AGC SWITCH Q308
SWITCH Q303
EVR IC315
MIC AMP IC302
EEP ROM IC804
MAIN CONTROL IC805
S704 INITIAL
S703 REFLECT
S702 PROTECT
X803 12MHz
D808 REC
SWITCH UNIT
LCD
S12 OPEN/CLOSE
KEY MATRIX S1-5 S8, 10, 11
VOL
REMOCON DET Q805
REMOCON SWITCH Q806
SUB CONTROL IC803
RESET IC809
S805 RESET
S804 CLOCK SET
S803 BASS BOOST
S801 REC
S802 HOLD
JP801 TEST
X801 4.19MHz
X802 32.768KHz
IC811
S701 MEDIA
BATTERY CHECK Q802
BATTERY CHECK Q808
Q804
HEADPHONE AMP IC308
IC317
IC310
IC310, IC317 DBB LEVEL SWITCH
POWER ON MUTE IC320
MUTE SWITCH Q307
MUTING Q102
MUTE SWITCH Q309
MUTE SWITCH Q312
J303 LINE OUT
J302 /REMOTE
J301 MIC PLUG IN POWER
• Signal path.
:PB
:REC
:digital in
:MIC
REG Q304
B+ SWITCH Q313
4.5V REG IC301
SWITCH Q302 (1/2)
SWITCH Q302 (2/2)
4.5V REG IC319
3.4V REG IC309
3.2V REG IC318
3.1V REG IC608
3.1V REG IC604
3.1V REG IC807
B+ SWITCH Q305
LINE IN SWITCH Q306
J201 OPT/LINE IN
3.5V REG IC801
B+ SWITCH Q809
SWITCH Q801
VOLTAGE DET IC806
VOLTAGE DET IC802
Q803
DC-DC CONVERTER UNIT

6-4. PRINTED WIRING BOARDS

- See page 32, 33 for Semiconductor Lead Layouts.

• Semiconductor Location

Ref. No.	Location	Ref. No.	Location
D301	I-15	IC601	F-23
D302	J-16	IC602	D-22
D303	H-18	IC603	C-25
D304	I-18	IC604	B-17
D305	I-18	IC605	D-17
D307	D-18	IC606	E-22
D308	C-18	IC607	E-25
D309	D-18	IC608	D-24
D310	J-12	IC701	F-3
D501	C-12	IC702	E-3
D504	B-27	IC801	A-25
D505	B-27	IC802	A-26
D506	G-28	IC803	C-14
D601	E-24	IC804	E-27
D801	B-23	IC805	D-11
D802	B-15	IC806	A-25
D803	E-14	IC807	D-27
D804	B-13	IC808	H-28
D805	B-26	IC809	B-26
D806	C-13	IC810	E-26
D808	J-24	IC811	C-16
D809	B-15	IC901	I-3
D810	C-26		
D811	I-28	Q101	I-26
D812	B-16	Q102	E-18
D813	E-14	Q201	G-25
D814	B-11	Q202	E-18
D901	I-3	Q302	H-23
D902	I-3	Q303	H-24
		Q304	G-23
IC301	H-22	Q305	F-18
IC302	G-17	Q306	E-21
IC303	G-16	Q307	H-23
IC304	H-15	Q308	H-23
IC305	F-15	Q309	D-18
IC306	F-14	Q310	F-25
IC307	F-25	Q311	F-25
IC308	I-15	Q312	C-18
IC309	H-25	Q313	H-23
IC310	H-13	Q501	G-29
IC311	H-25	Q502	G-12
IC312	I-25	Q503	F-28
IC314	I-25	Q506	C-11
IC315	H-14	Q508	A-28
IC316	H-26	Q510	I-29
IC317	I-14	Q511	A-27
IC318	F-26	Q512	B-29
IC319	E-16	Q514	B-26
IC320	I-14	Q515	I-9
IC501	G-28	Q701	E-7
IC502	H-12	Q702	E-4
IC505	H-27	Q801	B-25
IC506	I-11	Q802	D-13
IC507	E-28	Q803	B-26
IC508	A-27	Q804	D-15
IC509	C-28	Q805	C-13
IC510	F-27	Q806	B-26
IC511	F-12	Q808	D-26
IC512	B-30	Q809	B-16
IC513	H-11	Q901	J-2
IC514	G-11	Q902	J-3
IC515	D-29	Q903	J-4
IC516	H-28	Q904	H-4
IC517	I-10		

Note:

- ○—— : parts extracted from the component side.
- ○ : Through hole.
- △ : internal component.
- ▨ : Pattern on the side which enable seeing.
- ░ : Pattern of the rear side.

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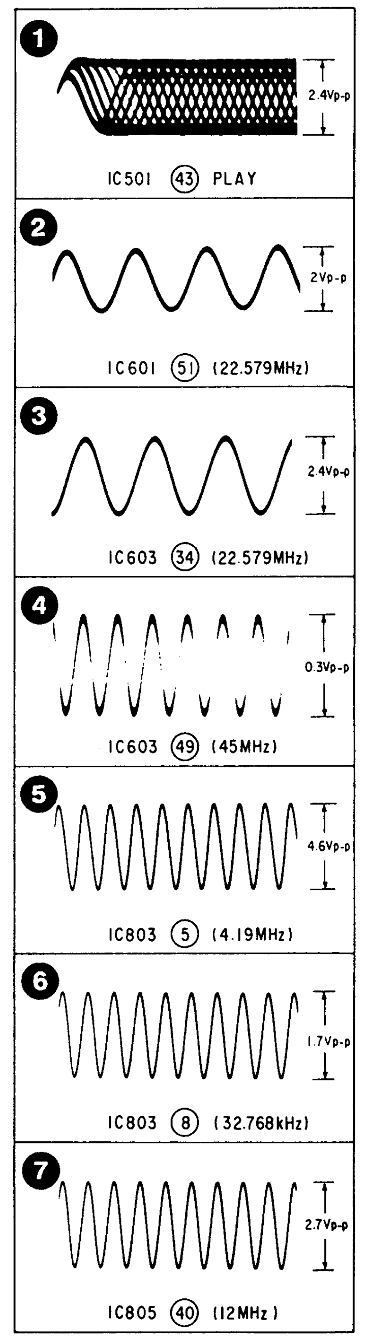
LCD MODULE
LCD
DISPLAY
PLAY MODE
ERASE
END SERCH
TRACK MARK
VOL
OPEN/CLOSE
S1
S2
S3
S4
S5
S6
S7
S8
S9
S10
S11
S12
DC-DC CONVERTER UNIT
DC IN 6V
[MAIN BOARD] (SIDE A)
[MAIN BOARD] (SIDE B)
[MECHA-CON BOARD] (SIDE A)
[MECHA-CON BOARD] (SIDE B)
[CLV FLEXIBLE BOARD]
M903 LOADING MOTOR
M902 SLED MOTOR
M901 SPINDLE MOTOR
1-651-017-
[REC BOARD]
1-651-019-
MINI DISC OPTICAL PICK-UP BLOCK (KMS-190A)
CLOCK SET
IC804
IC801
IC803
IC805
IC511
IC502
IC506
IC308
IC602
IC603
IC605
IC507
IC312
J303 LINE OUT
J301 MIC PLUG IN POWER
J201 OPT/LINE IN
J302 REMOTE
EXCEPT E,JE MODEL
S801 REC
S802 HOLD
1-651-014-

6-5. SCHEMATIC DIAGRAM — RF/SERVO SECTION —

- Refer to page 45 for Printed Wiring Boards.
- See page 65 to 70 for IC Block Diagrams.

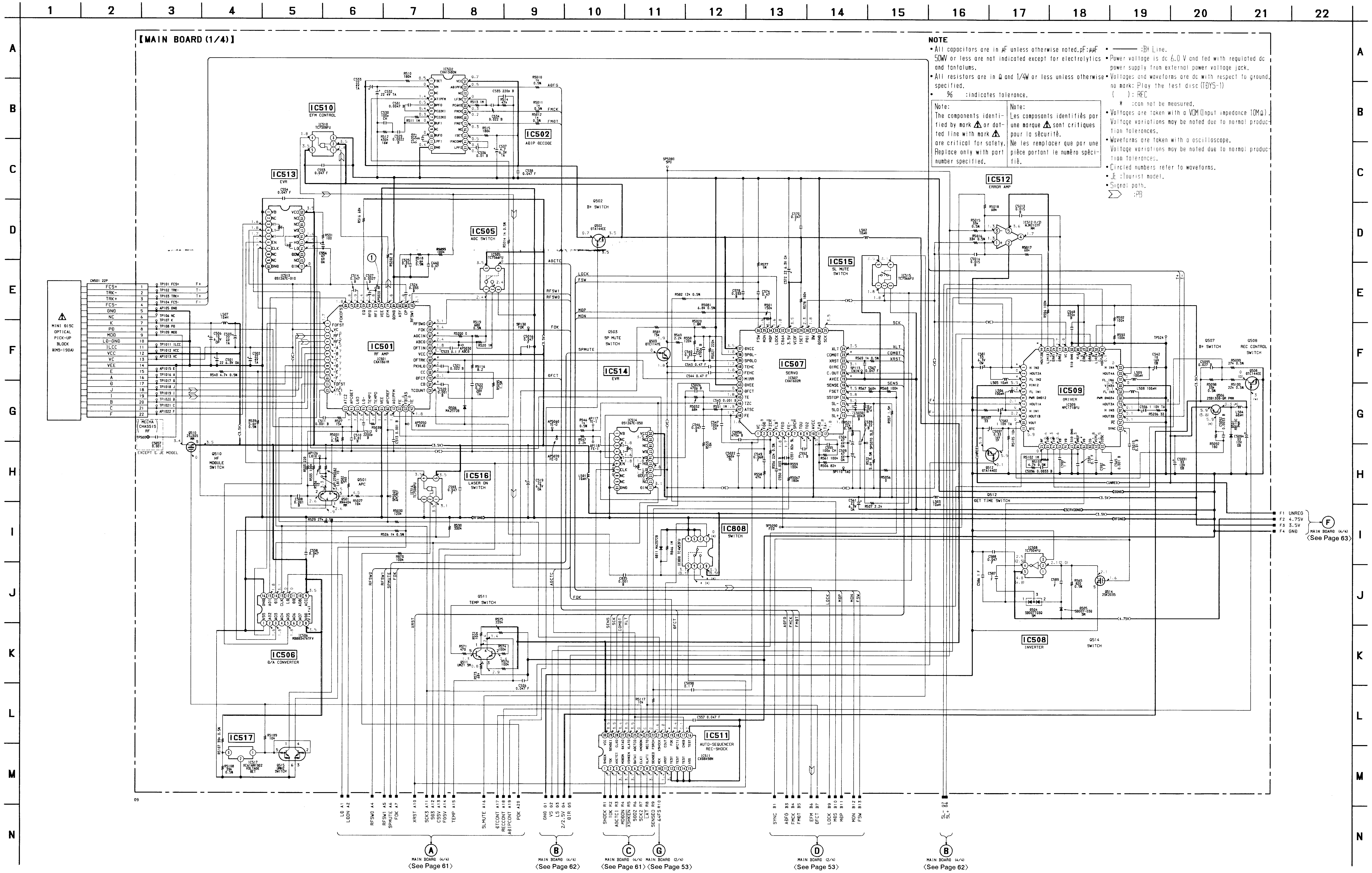
- **Waveforms.**



NOTE
- All capacitors are in μF unless otherwise noted. pF: μμF 50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and 1/4W or less unless otherwise specified.
- % :indicates tolerance.

Note:	Note:
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

- ——— :B+ Line.
- Power voltage is dc 6.0 V and fed with regulated dc power supply from external power voltage jack.
- Voltages and waveforms are dc with respect to ground. no mark: Play the test disc (TDYS-1)
  ( ): REC
  * :can not be measured.
- Voltages are taken with a VOM (Input impedance 10MΩ). Voltage variations may be noted due to normal production tolerances.
- Waveforms are taken with a oscilloscope. Voltage variations may be noted due to normal production tolerances.
- Circled numbers refer to waveforms.
- JE :Tourist model.
- Signal path.
  ⟩ :PB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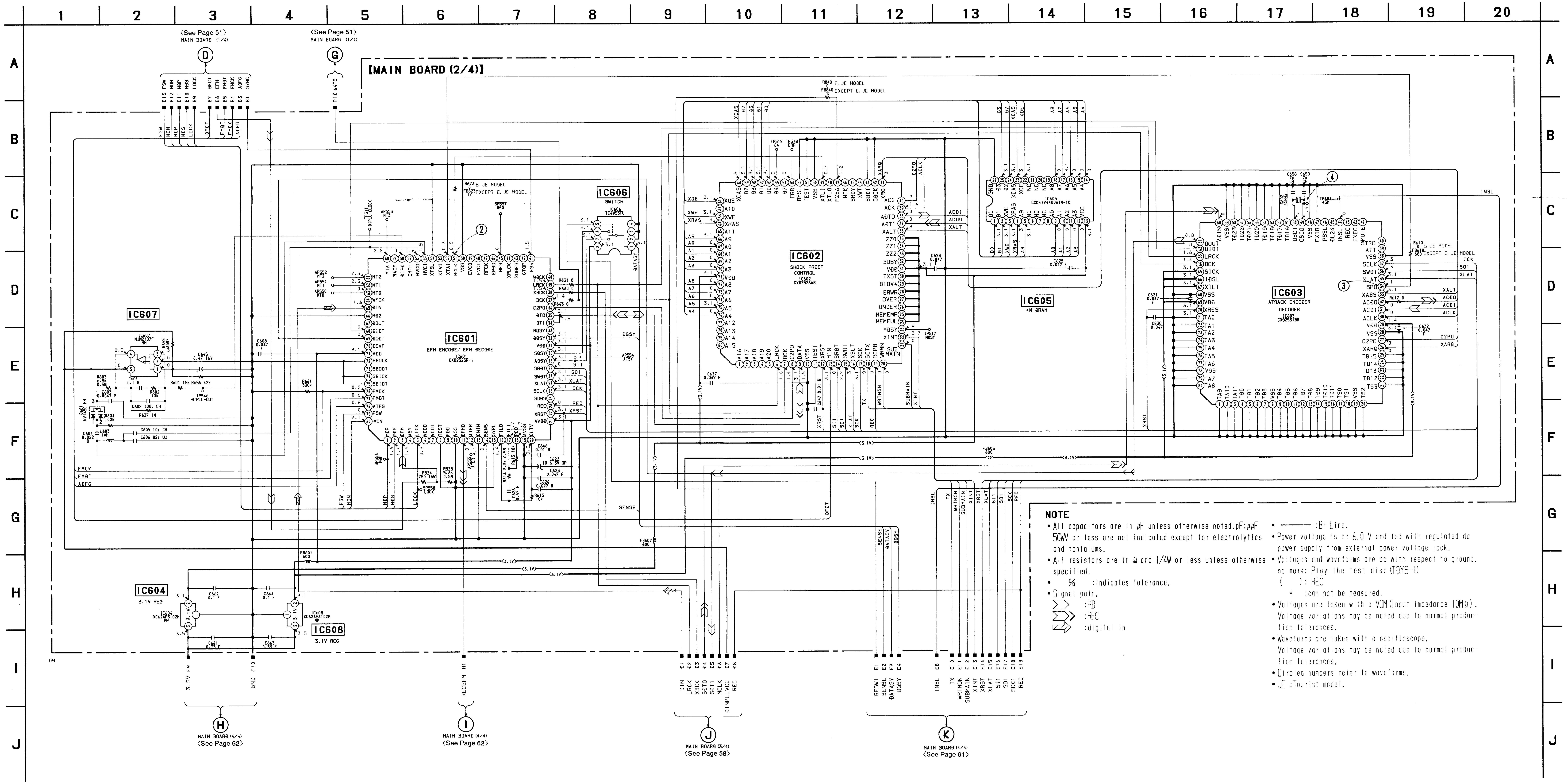
N
[MAIN BOARD (1/4)]
MINI DISC OPTICAL PICK-UP BLOCK
CN501 22P
MECHA CHASSIS RF
EXCEPT E, JE MODEL
IC510 EFM CONTROL
IC502 ADIP DECODE
IC513 EVR
IC505 AGC SWITCH
IC501 RF AMP
IC515 SL MUTE SWITCH
IC512 ERROR AMP
IC507 SERVO
IC514 EVR
IC509 DRIVER
IC516 LASER ON SWITCH
IC808 SWITCH
IC506 D/A CONVERTER
IC508 INVERTER
IC517
IC511 AUTO-SEQUENCER REC-SHOCK
Q502 B+ SWITCH
Q503 SP MUTE SWITCH
Q510 HF MODULE SWITCH
Q501 APC
Q511 TEMP SWITCH
Q512 SET TIME SWITCH
Q507 B+ SWITCH
Q508 REC CONTROL SWITCH
Q514 SWITCH
F1 UNREG
F2 4.75V
F3 3.5V
F4 GND
F
MAIN BOARD (4/4)
⟨See Page 63⟩
LD A1
LDON A2
RFSW0 A4
RFSW1 A5
SPMUTE A6
FOK A7
XRST A10
SCK3 A11
SD3 A12
CSSV A13
FGSV A14
TEMP A15
SLMUTE A16
DTCONT A17
RECCONT A18
ADIPCONT A19
POK A20
A
MAIN BOARD (4/4)
⟨See Page 61⟩
GND G1
VS G2
LS G3
2/2.5V G4
DIR G5
B
MAIN BOARD (4/4)
⟨See Page 62⟩
SHOCK R1
TOK R2
AGCTC1 R3
MODON R4
XSHKEN R5
SDO2 R6
SCK2 R7
LAT R8
SENSEO R9
64FS R10
C
MAIN BOARD (4/4)
⟨See Page 61⟩
G
MAIN BOARD (2/4)
⟨See Page 53⟩
SYNC B1
ADFG B3
FMCK B4
FMDT B5
EFM B6
DFCT B7
LOCK B9
MDS B10
MDP B11
MON B12
FSW B13
D
MAIN BOARD (2/4)
⟨See Page 53⟩
SL- G7
SL+ G6
B
MAIN BOARD (4/4)
⟨See Page 62⟩

6-6. SCHEMATIC DIAGRAM — PROCESS SECTION —

- Refer to page 45 for Printed Wiring Boards.
- See page 34 to 41 for IC Pin Functions.
- See page 49 for Waveforms.
- See page 65 to 70 for IC Block Diagrams.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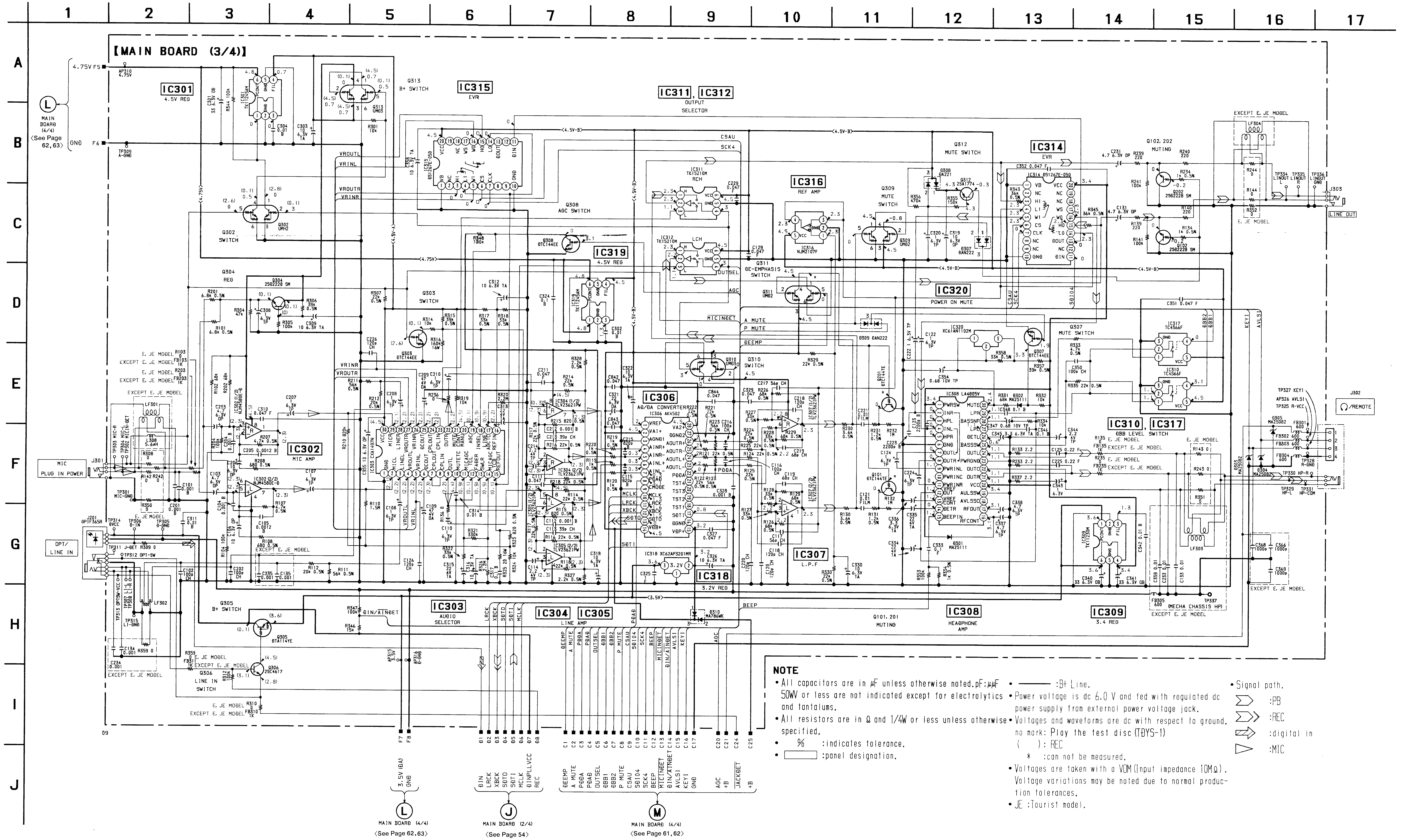
J
[MAIN BOARD (2/4)]
(See Page 51) MAIN BOARD (1/4)
D
G
IC601
EFM ENCODE/EFM DECODE
IC601 CXD2525R-1
IC602
SHOCK PROOF CONTROL
IC602 CXD2526AR
IC603
ATRACK ENCODER DECODER
IC603 CXD2531BR
IC605
4M DRAM
IC605 CXK414400ATM-10
IC606
SWITCH
IC606 TC4053FU
IC607
IC607 NJM2107F
IC604
3.1V REG
IC604 XC62AP3102M
IC608
3.1V REG
IC608 XC62AP3102M
R623 E, JE MODEL
FB623 EXCEPT E, JE MODEL
R640 E, JE MODEL
FB640 EXCEPT E, JE MODEL
R610 E, JE MODEL
FB610 EXCEPT E, JE MODEL
(3.1V)
SENSE
H
MAIN BOARD (4/4) (See Page 62)
I
MAIN BOARD (4/4) (See Page 62)
J
MAIN BOARD (3/4) (See Page 58)
K
MAIN BOARD (4/4) (See Page 61)
3.5V F9
GND F10
RECEFM H1
DIN
LRCK
XBCK
SBDT0
SBDT1
MCLK
DINPLLVCC
REC
RFSW1
SENSE
DATASY
BGSY
INSL
TX
WRTMON
SUBHAIN
XINT
XRST
XLAT
SI1
SO1
SCK1
REC
09

NOTE

- All capacitors are in μF unless otherwise noted. pF: μμF 50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and 1/4W or less unless otherwise specified.
- % :indicates tolerance.
- Signal path.
  - ⇒ :PB
  - ⇒⟩ :REC
  - ▨⇒ :digital in
- ——— :B+ Line.
- Power voltage is dc 6.0 V and fed with regulated dc power supply from external power voltage jack.
- Voltages and waveforms are dc with respect to ground.
  - no mark: Play the test disc (TDYS-1)
  - ( ): REC
  - * :can not be measured.
- Voltages are taken with a VOM (Input impedance 10MΩ). Voltage variations may be noted due to normal production tolerances.
- Waveforms are taken with a oscilloscope. Voltage variations may be noted due to normal production tolerances.
- Circled numbers refer to waveforms.
- JE :Tourist model.

6-7. SCHEMATIC DIAGRAM — AUDIO SECTION —

- Refer to page 45 for Printed Wiring Boards.
- See page 65 to 70 for IC Block Diagrams.


【MAIN BOARD (3/4)】
IC301 4.5V REG
Q313 B+ SWITCH
IC315 EVR
IC311, IC312 OUTPUT SELECTOR
IC314 EVR
Q312 MUTE SWITCH
Q102, 202 MUTING
Q302 SWITCH
Q304 REG
Q303 SWITCH
Q308 AGC SWITCH
IC319 4.5V REG
IC316 REF AMP
Q309 MUTE SWITCH
Q311 DE-EMPHASIS SWITCH
IC320 POWER ON MUTE
Q307 MUTE SWITCH
IC302 MIC AMP
IC306 AD/DA CONVERTER
Q310 SWITCH
IC307 L.P.F
IC318 3.2V REG
IC310, IC317 DBB LEVEL SWITCH
IC303 AUDIO SELECTOR
IC304, IC305 LINE AMP
Q305 B+ SWITCH
Q306 LINE IN SWITCH
Q101, 201 MUTING
IC308 HEADPHONE AMP
IC309 3.4 REG
MAIN BOARD (4/4) (See Page 62, 63)
MIC PLUG IN POWER
OPT/LINE IN
LINE OUT
J302 REMOTE
EXCEPT E, JE MODEL
(MECHA CHASSIS HP)
3.5V (6A) GND
MAIN BOARD (4/4) (See Page 62, 63)
DIN LRCK XBCK SDTO SDTI MCLK DINPLLVCC REC
MAIN BOARD (2/4) (See Page 54)
BEEMP A MUTE PDDA PDAD OUTSEL DBB1 DBB2 P MUTE CSAU SD104 SCK4 BEEP MICINBET DIN/ATINBET AVLS1 KEY1 GND AGC +B JACKDET +B
MAIN BOARD (4/4) (See Page 61, 62)

NOTE

- All capacitors are in μF unless otherwise noted. pF: μμF 50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and 1/4W or less unless otherwise specified.
- % : indicates tolerance.
- ▭ : panel designation.

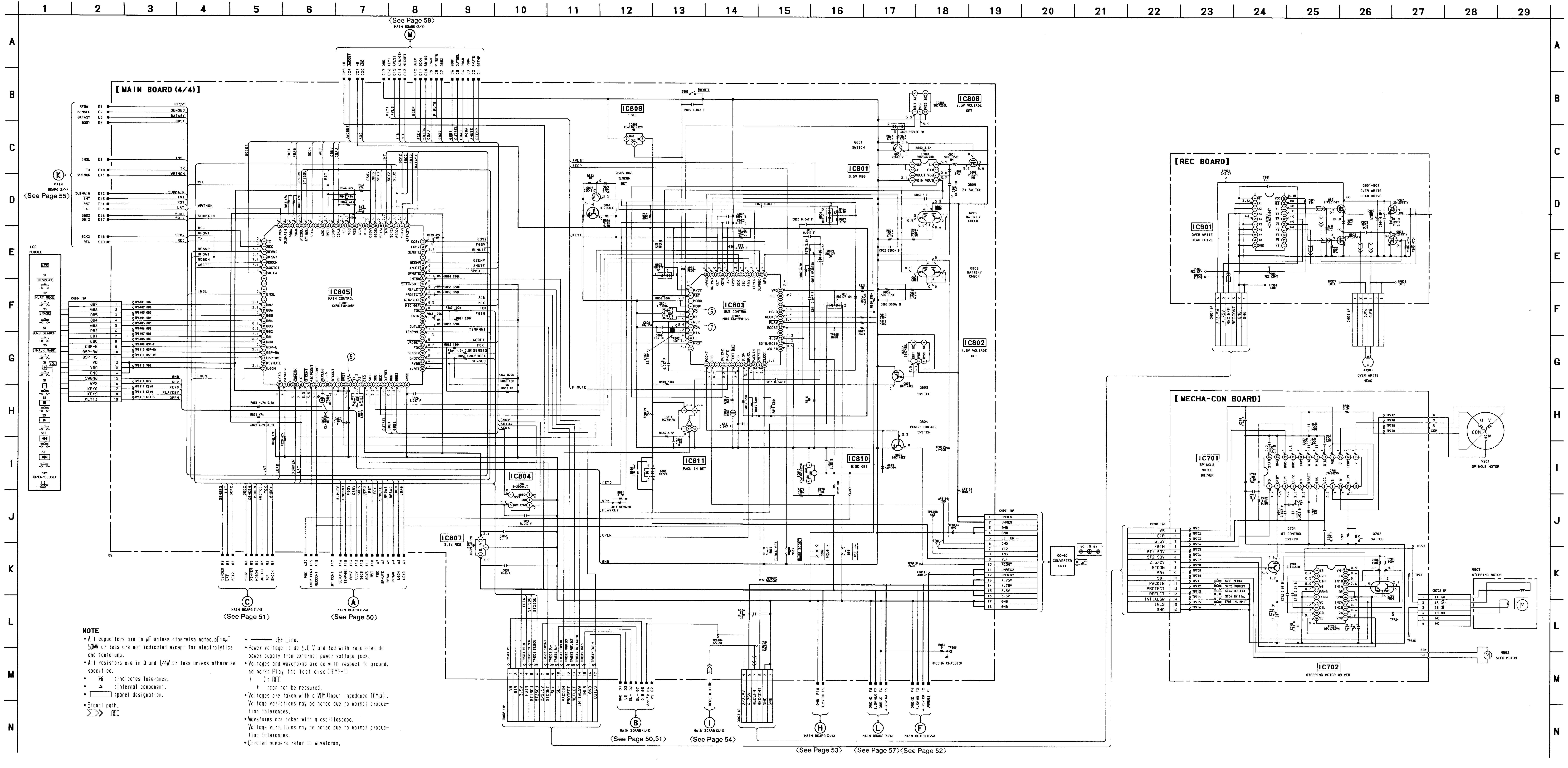
- ——— : B+ Line.
- Power voltage is dc 6.0 V and fed with regulated dc power supply from external power voltage jack.
- Voltages and waveforms are dc with respect to ground.
  no mark: Play the test disc (TDYS-1)
  ( ) : REC
  * : can not be measured.
- Voltages are taken with a VOM (Input impedance 10MΩ). Voltage variations may be noted due to normal production tolerances.
- JE : Tourist model.

- Signal path.

⊳	:PB
⊳⊳	:REC
⇨	:digital in
▷	:MIC

6-8. SCHEMATIC DIAGRAM — MICRO COMPUTER/MD SECTION —

- Refer to page 45 for Printed Wiring Boards.
- See page 34 to 41 for IC Pin Functions.
- See page 49 for Waveforms.
- See page 65 to 70 for IC Block Diagrams.

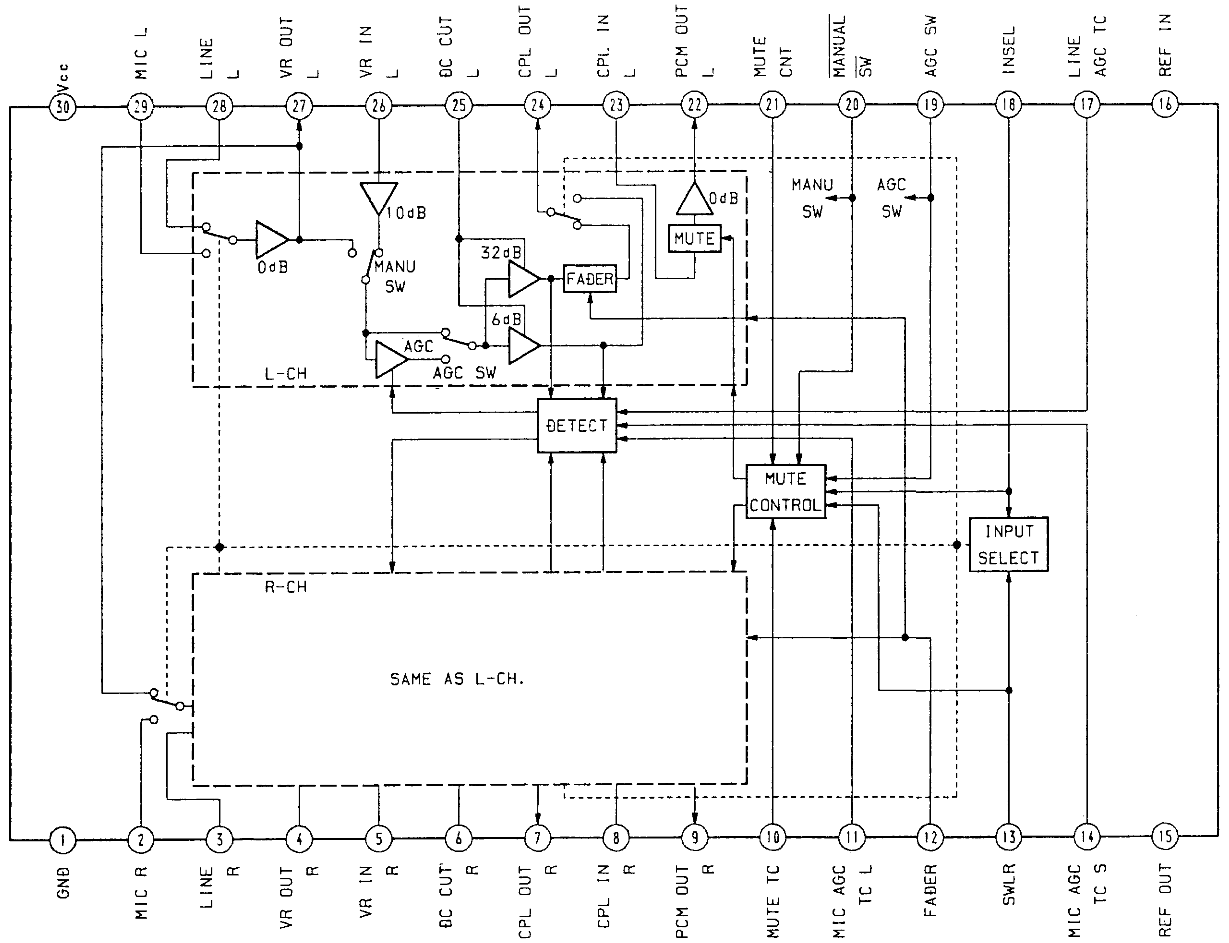

[MAIN BOARD (4/4)]
(See Page 59)
MAIN BOARD (3/4)
Ⓜ
Ⓚ
MAIN BOARD (2/4)
(See Page 55)
LCD MODULE
IC605 MAIN CONTROL
IC803 SUB CONTROL
IC809 RESET
IC806 2.5V VOLTAGE DET
IC801 3.5V REG
IC802 4.5V VOLTAGE DET
IC804
IC807 5.1V REG
IC810 DISC DET
IC811 PACK IN DET
Q801 SWITCH
Q802 BATTERY CHECK
Q803 SWITCH
Q804 POWER CONTROL SWITCH
Q805 BATTERY CHECK
Q809 B+ SWITCH
Ⓒ
MAIN BOARD (1/4)
(See Page 51)
Ⓐ
MAIN BOARD (1/4)
(See Page 50)
Ⓑ
MAIN BOARD (1/4)
(See Page 50,51)
Ⓘ
MAIN BOARD (2/4)
(See Page 54)
Ⓗ
MAIN BOARD (2/4)
(See Page 53)
Ⓛ
MAIN BOARD (3/4)
(See Page 57)
Ⓕ
MAIN BOARD (1/4)
(See Page 52)
DC-DC CONVERTER UNIT
(MECHA CHASSIS)
[REC BOARD]
IC901 OVER WRITE HEAD DRIVE
Q901-904 OVER WRITE HEAD DRIVE
HR901 OVER WRITE HEAD
[MECHA-CON BOARD]
IC701 SPINDLE MOTOR DRIVER
IC702 STEPPING MOTOR DRIVER
Q701 S1 CONTROL SWITCH
Q702 SWITCH
M901 SPINDLE MOTOR
M903 STEPPING MOTOR
M902 SLED MOTOR

NOTE

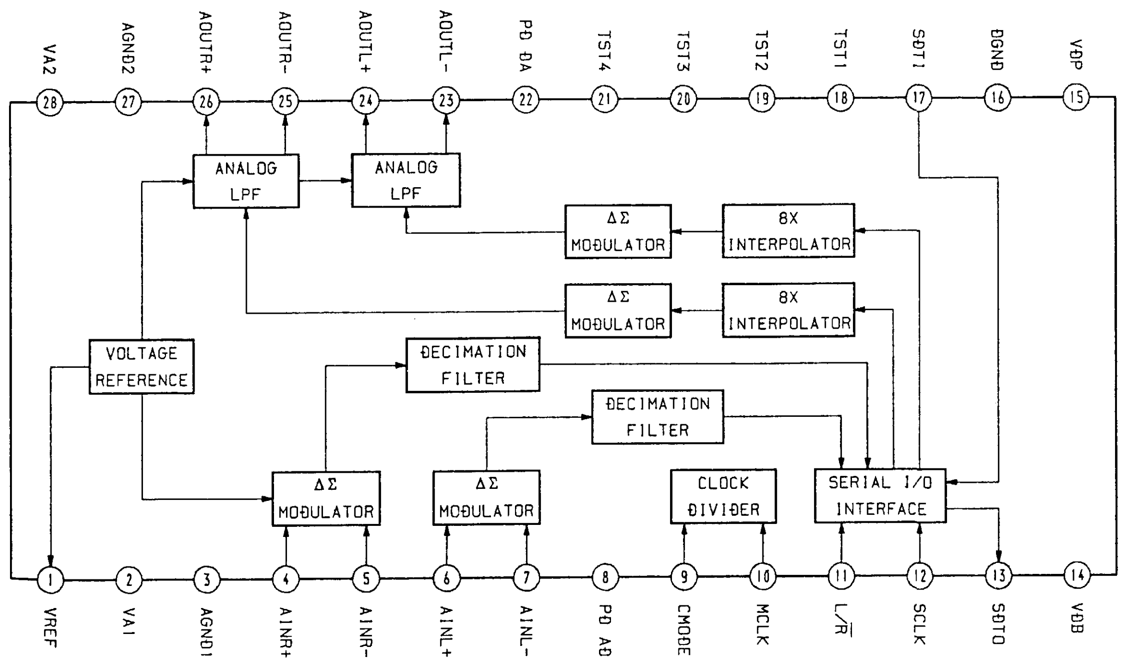
- All capacitors are in μF unless otherwise noted. pF: μμF 50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and 1/4W or less unless otherwise specified.
- % :indicates tolerance.
- △ :internal component.
- ☐ :panel designation.
- Signal path.
  ⟩⟩ :REC
- ——— :B+ Line.
- Power voltage is dc 6.0 V and fed with regulated dc power supply from external power voltage jack.
- Voltages and waveforms are dc with respect to ground.
  no mark: Play the test disc (TDYS-1)
  ( ) : REC
  * :can not be measured.
- Voltages are taken with a VOM (Input impedance 10MΩ). Voltage variations may be noted due to normal production tolerances.
- Waveforms are taken with a oscilloscope. Voltage variations may be noted due to normal production tolerances.
- Circled numbers refer to waveforms.

6-9. IC BLOCK DIAGRAMS

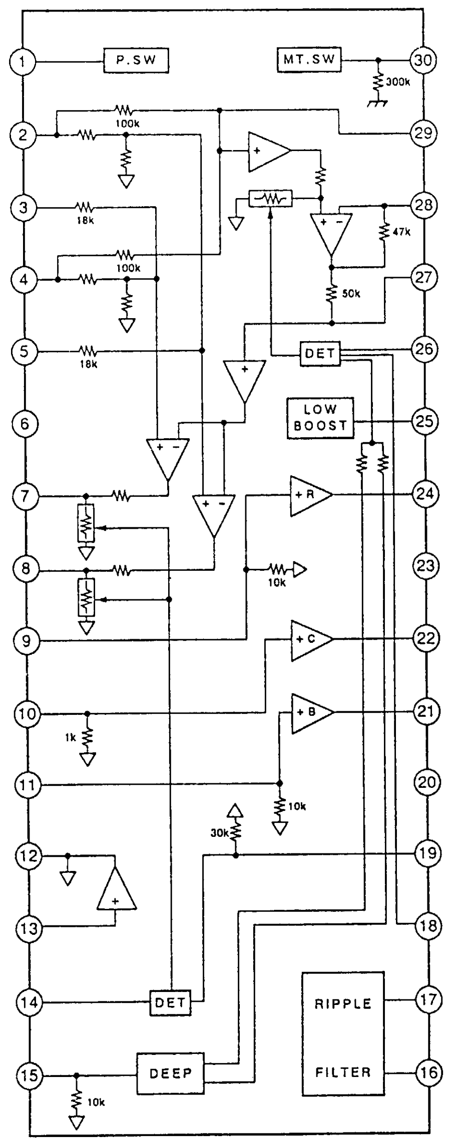
IC303 CXA1497N-E2


Vcc
MIC L
LINE L
VR OUT L
VR IN L
DC CUT L
CPL OUT L
CPL IN L
PCM OUT L
MUTE CNT
MANUAL SW
AGC SW
INSEL
LINE AGC TC
REF IN
0dB
10dB
MANU SW
32dB
6dB
FADER
MUTE
0dB
MANU SW
AGC SW
AGC
AGC SW
L-CH
DETECT
MUTE CONTROL
INPUT SELECT
R-CH
SAME AS L-CH.
GND
MIC R
LINE R
VR OUT R
VR IN R
DC CUT R
CPL OUT R
CPL IN R
PCM OUT R
MUTE TC
MIC AGC TC L
FADER
SWLR
MIC AGC TC S
REF OUT

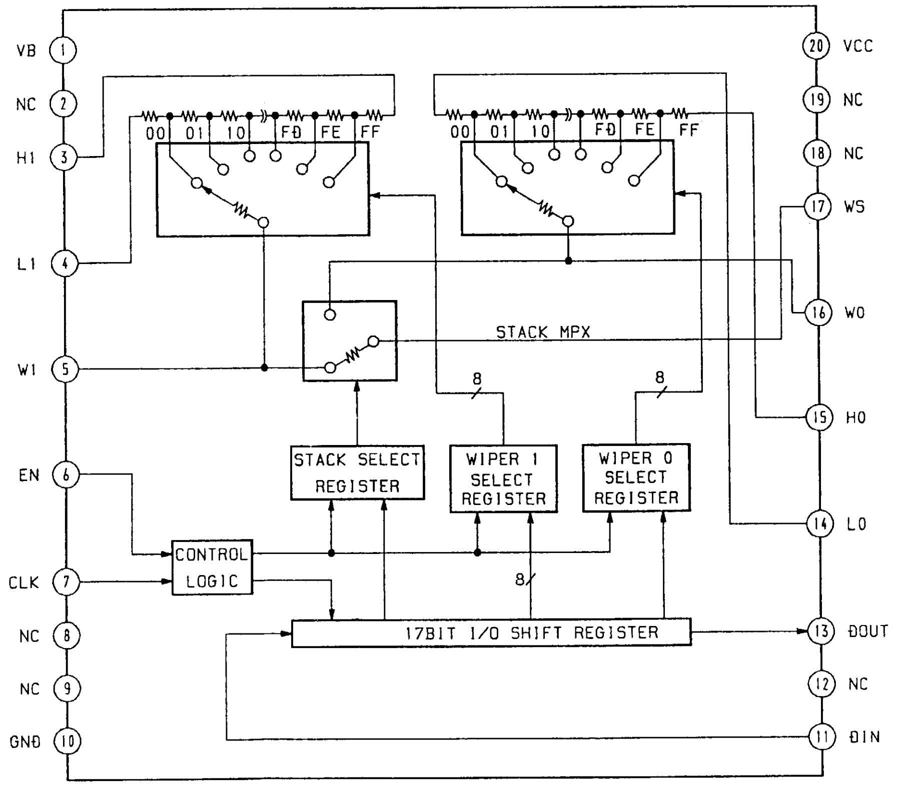
IC306 AK4502-VS-E1


VA2
AGND2
AOUTR+
AOUTR-
AOUTL+
AOUTL-
PD DA
TST4
TST3
TST2
TST1
SDTI
DGND
VDD
ANALOG LPF
ANALOG LPF
ΔΣ MODULATOR
8X INTERPOLATOR
ΔΣ MODULATOR
8X INTERPOLATOR
VOLTAGE REFERENCE
DECIMATION FILTER
DECIMATION FILTER
ΔΣ MODULATOR
ΔΣ MODULATOR
CLOCK DIVIDER
SERIAL I/O INTERFACE
VREF
VA1
AGND1
AINR+
AINR-
AINL+
AINL-
PD AD
CMODE
MCLK
L/R
SCLK
SDTO
VDD

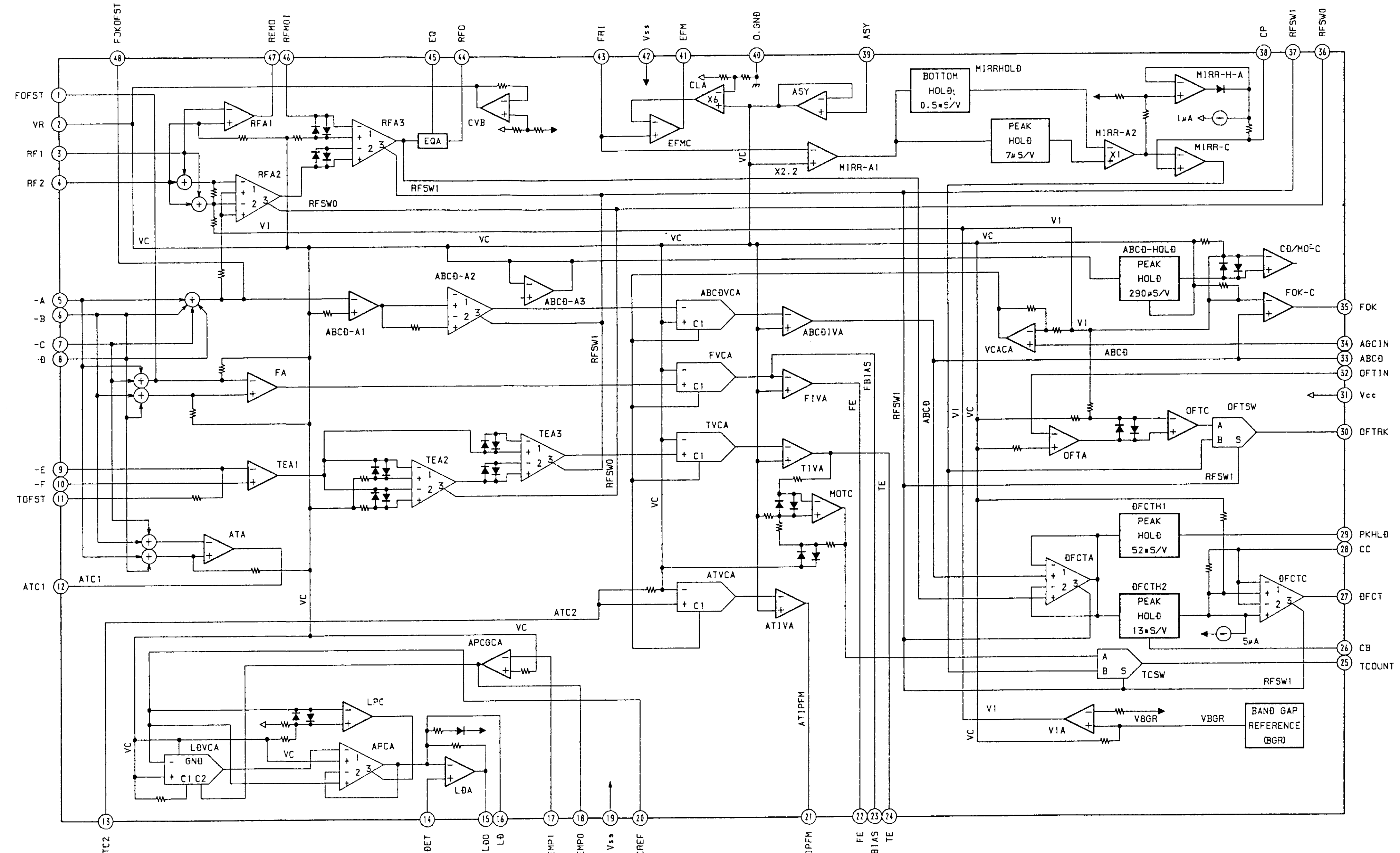
IC308 LA4805V


P.SW
MT.SW
300k
100k
100k
18k
100k
18k
47k
60k
DET
LOW BOOST
+R
10k
+C
+B
1k
10k
30k
DET
DEEP
RIPPLE
FILTER
10k

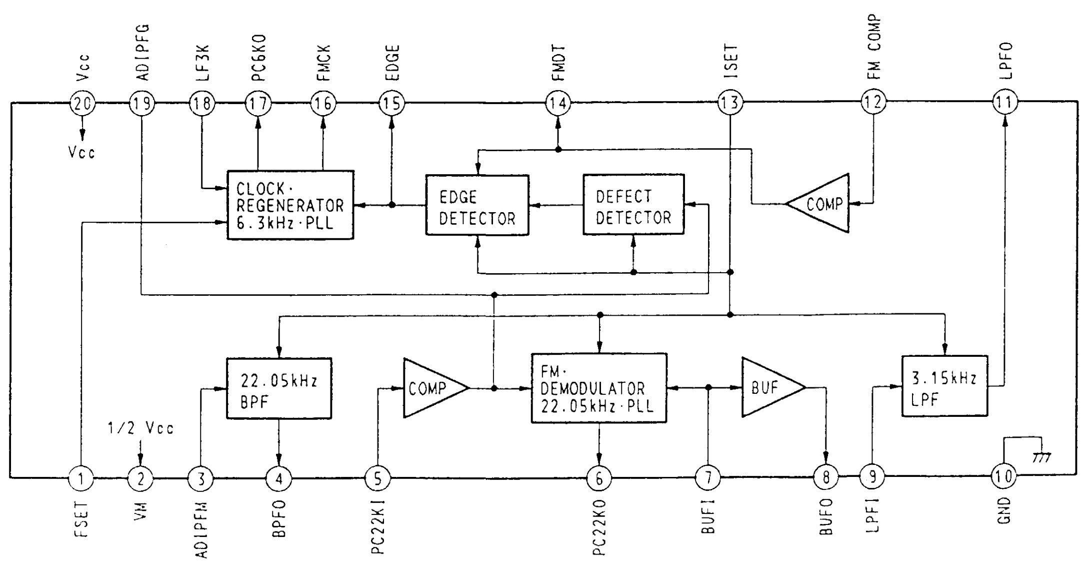
IC314, IC315, IC514 DS1267-50
IC513 DS1267E-10


VB
NC
H1
L1
W1
EN
CLK
NC
NC
GND
00
01
10
F0
FE
FF
STACK MPX
8
8
8
STACK SELECT REGISTER
WIPER 1 SELECT REGISTER
WIPER 0 SELECT REGISTER
CONTROL LOGIC
17BIT I/O SHIFT REGISTER
VCC
NC
NC
WS
WO
HO
LO
DOUT
NC
DIN

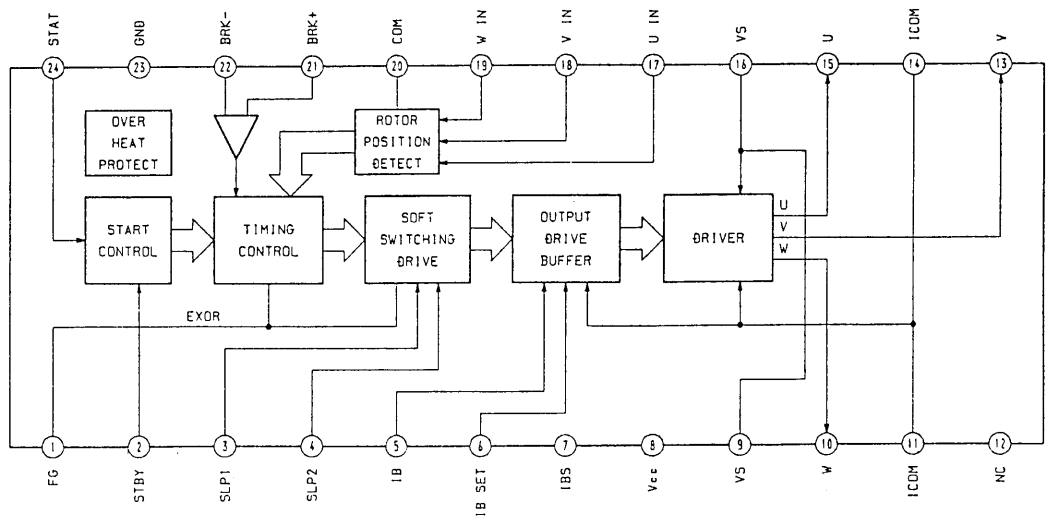
IC501 CXA1861R


FOFST
RFMO
RFMDI
EQ
RFO
FRI
Vss
EFM
D.GND
ASY
CP
RFSW1
RFSWO
FOFST
VR
RF1
RF2
RFA1
RFA3
RFA2
EQA
CVB
CLA
X6
EFMC
ASY
X2.2
MIRR-A1
BOTTOM HOLD 0.5*S/V
MIRRHOLD
PEAK HOLD 7*S/V
MIRR-A2
X1
MIRR-H-A
MIRR-C
1μA
V1
VC
ABCO-HOLD PEAK HOLD 290*S/V
CD/MD-C
FOK-C
ABCO-A2
ABCO-A3
ABCO-A1
ABCOVCA
ABCOIVA
VCACA
ABCO
FA
FVCA
F1VA
TVCA
TIVA
OFTC
OFTSW
OFTA
TEA1
TEA2
TEA3
MOTC
ATA
ATVCA
ATIVA
OFCTH1 PEAK HOLD 52*S/V
OFCTA
OFCTH2 PEAK HOLD 13*S/V
OFCTC
5μA
TCSW
APCGCA
LPC
LDVCA
APCA
LDA
V1A
VBOR
BAND GAP REFERENCE (BGR)
-A
-B
-C
-D
-E
-F
TOFST
ATC1
FOK
AGCIN
ABCO
OFTIN
Vcc
OFTRK
PKHLD
CC
OFCT
CB
TCOUNT
ATC2
APCBET
LDO
LD
TEMPI
TEMPO
Vss
APCREF
ATIPFM
FE
FBIAS
TE

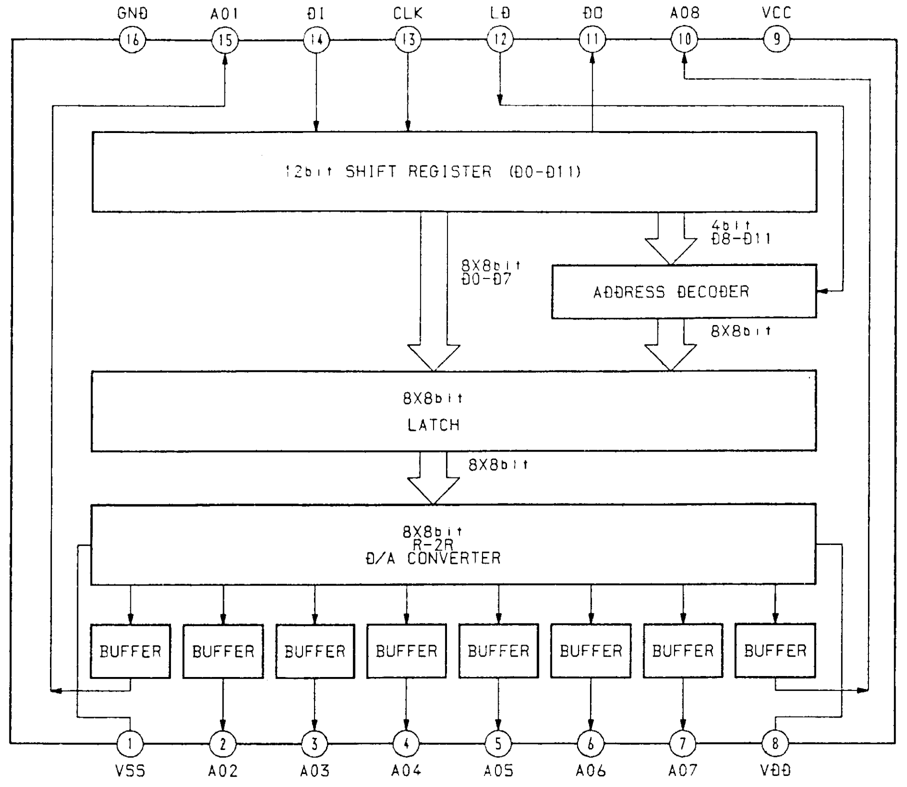
IC502 CXA1380N


Vcc
ADIPFG
LF3K
PC6KO
FMCK
EDGE
FMDT
ISET
FM COMP
LPFO
CLOCK-REGENERATOR 6.3kHz·PLL
EDGE DETECTOR
DEFECT DETECTOR
COMP
22.05kHz BPF
COMP
FM-DEMODULATOR 22.05kHz·PLL
BUF
3.15kHz LPF
1/2 Vcc
FSET
VM
ADIPFM
BPFO
PC22KI
PC22KO
BUFI
BUFO
LPFI
GND

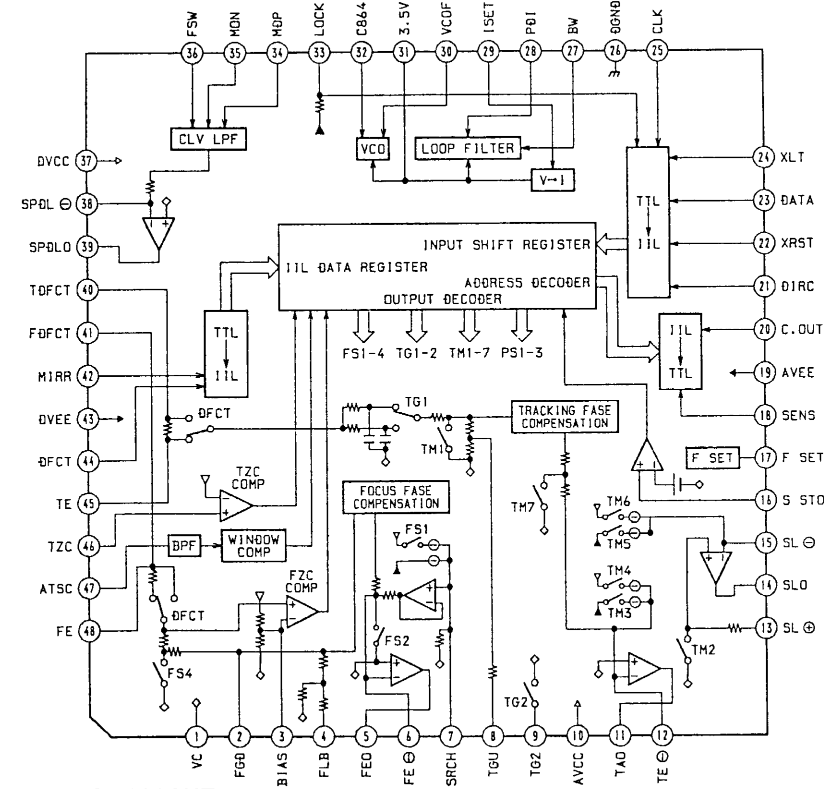
IC701 CXA8027N


STAT
GND
BRK-
BRK+
COM
W IN
V IN
U IN
VS
U
ICOM
V
OVER HEAT PROTECT
ROTOR POSITION DETECT
START CONTROL
TIMING CONTROL
SOFT SWITCHING DRIVE
OUTPUT DRIVE BUFFER
DRIVER
EXOR
FG
STBY
SLP1
SLP2
IB
IB SET
IBS
Vcc
VS
W
ICOM
NC

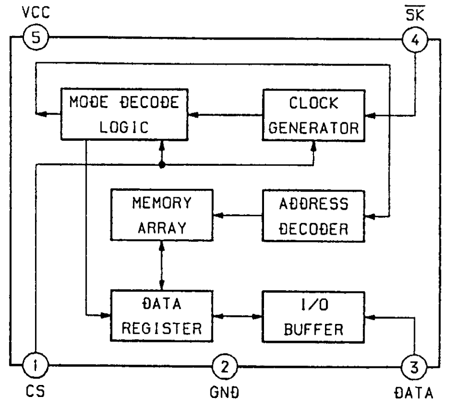
IC506 MB88347ATFV-EF


GND
AO1
DI
CLK
LD
DO
AO8
VCC
12bit SHIFT REGISTER (D0-D11)
4bit D8-D11
8X8bit D0-D7
ADDRESS DECODER
8X8bit
8X8bit LATCH
8X8bit
8X8bit R-2R D/A CONVERTER
BUFFER
VSS
AO2
AO3
AO4
AO5
AO6
AO7
VDD

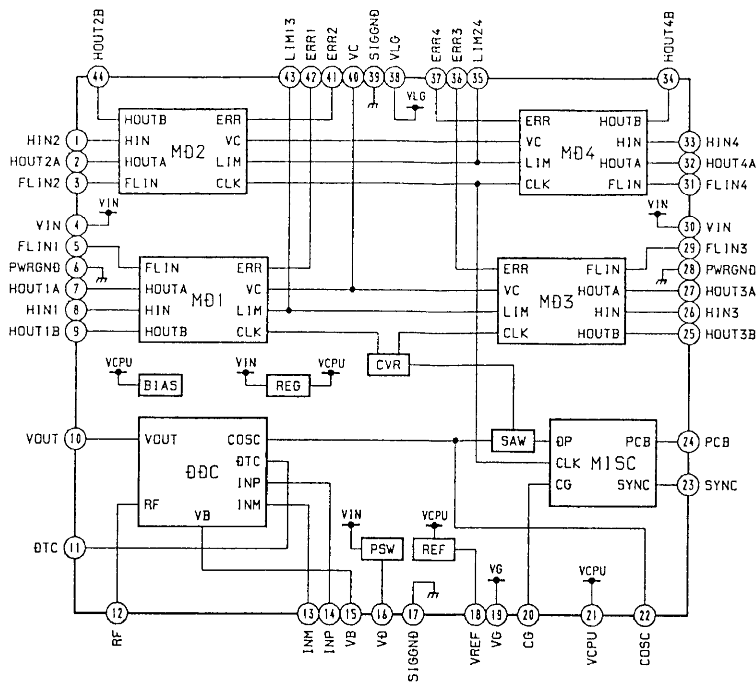
IC507 CXA1602R


CLV LPF
VCO
LOOP FILTER
V-I
IIL DATA REGISTER
INPUT SHIFT REGISTER
ADDRESS DECODER
OUTPUT DECODER
TTL
IIL
TRACKING FASE COMPENSATION
FOCUS FASE COMPENSATION
WINDOW COMP
TZC COMP
FZC COMP
BPF
F SET
DVCC
SPDL
SPDLO
TDFCT
FDFCT
MIRR
DVEE
DFCT
TE
TZC
ATSC
FE
XLT
DATA
XRST
DIRC
C.OUT
AVEE
SENS
S STOP
SL
SLO
VC
FGD
F BIAS
FLB
FEO
FE
SRCH
TGU
TG2
AVCC
TAO
TE

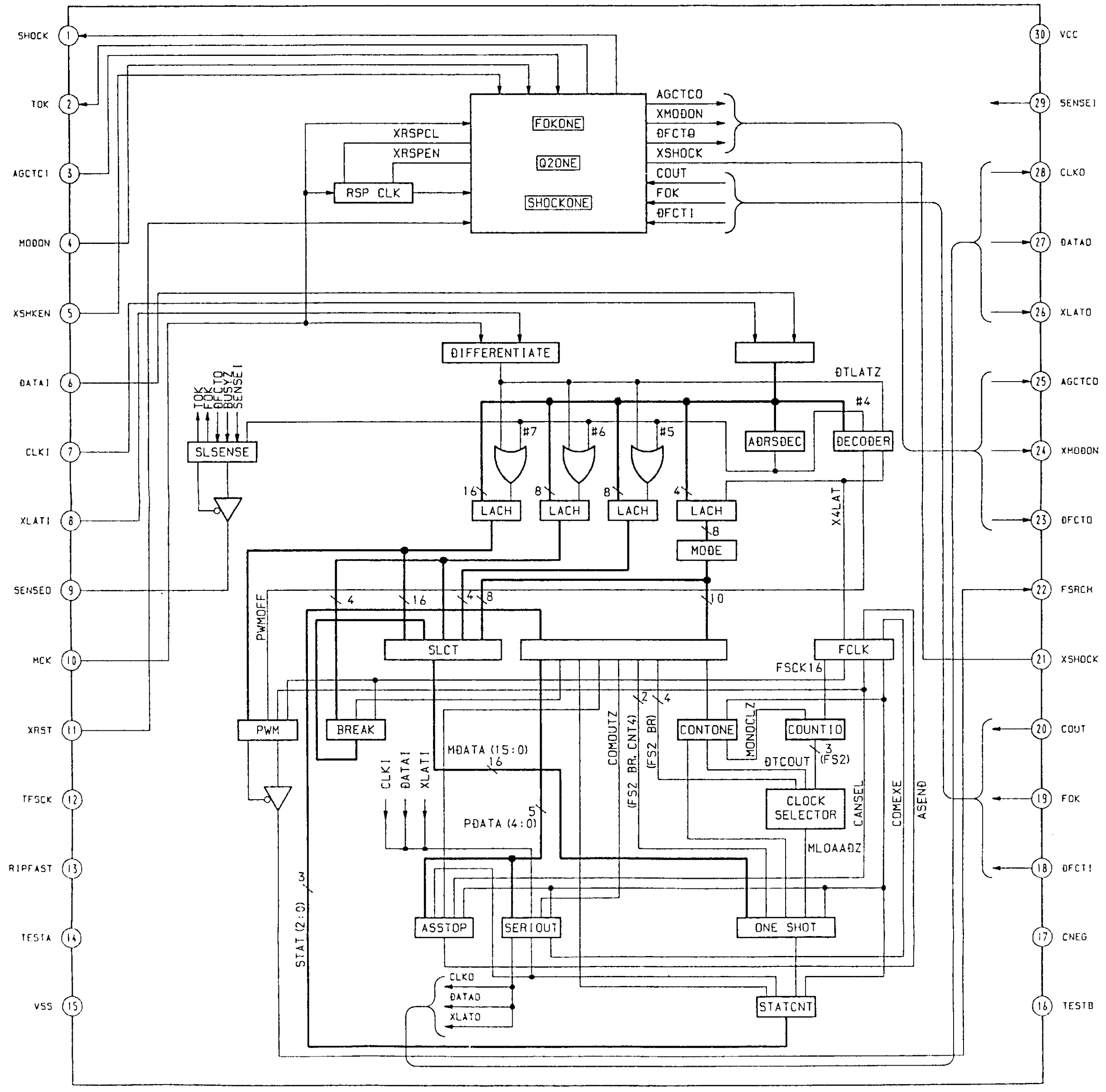
IC804 S-2900AUT


VCC
SK
MODE DECODE LOGIC
CLOCK GENERATOR
MEMORY ARRAY
ADDRESS DECODER
DATA REGISTER
I/O BUFFER
CS
GND
DATA

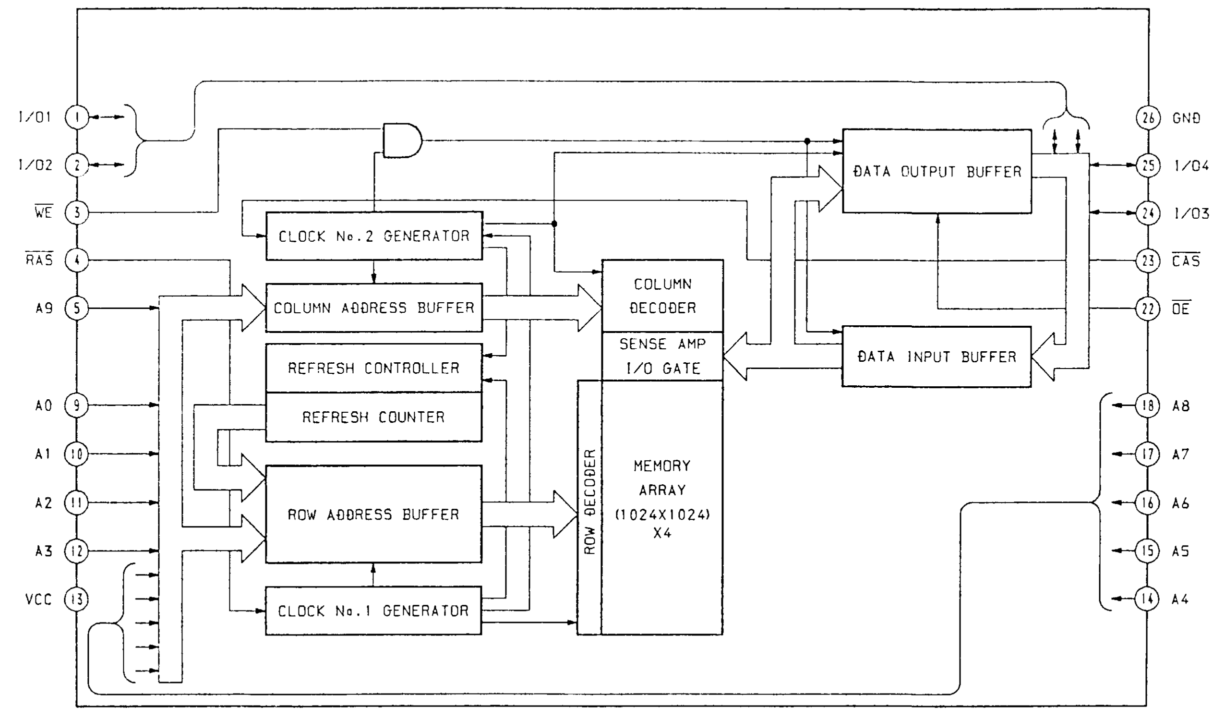
IC509 MPC1718FU


MD2
MD4
MD1
MD3
BIAS
REG
CVR
SAW
OSC
MISC
PSW
REF
HIN2
HOUT2A
FLIN2
VIN
FLIN1
PWRGND
HOUT1A
HIN1
HOUT1B
VOUT
DTC
HIN4
HOUT4A
FLIN4
VIN
FLIN3
PWRGND
HOUT3A
HIN3
HOUT3B
PCB
SYNC
RF
INM
INP
VB
VO
SIGGND
VREF
CG
VCPU
COSC

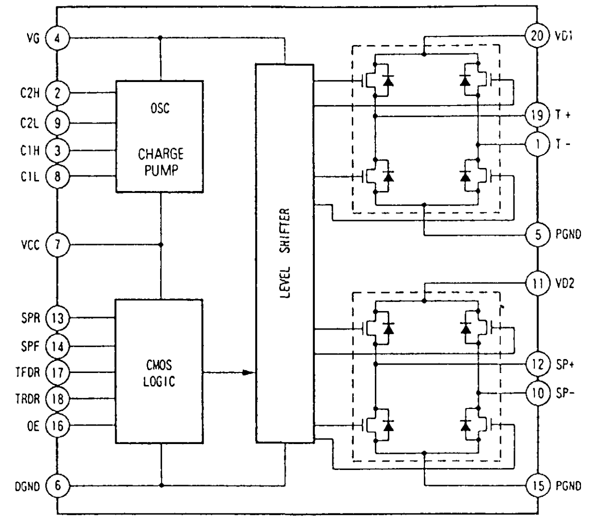
IC511 CXD8498N-ELL2000


FOKDNE
DZDNE
SHOCKDNE
RSP CLK
DIFFERENTIATE
SLSENSE
ADRSDEC
DECODER
LACH
MODE
SLCT
FCLK
PWM
BREAK
CONTDNE
COUNTID
CLOCK SELECTOR
ASSTOP
SERIOUT
ONE SHOT
STATCNT
SHOCK
TOK
AGCTCI
MODON
XSHKEN
DATAI
CLKI
XLATI
SENSEO
MCK
XRST
TFSCK
RIPFAST
TESTA
VSS
VCC
SENSEI
CLKO
DATAO
XLATO
AGCTCO
XMODON
DFCTO
FSRCH
XSHOCK
COUT
FOK
DFCTI
CNEG
TESTB

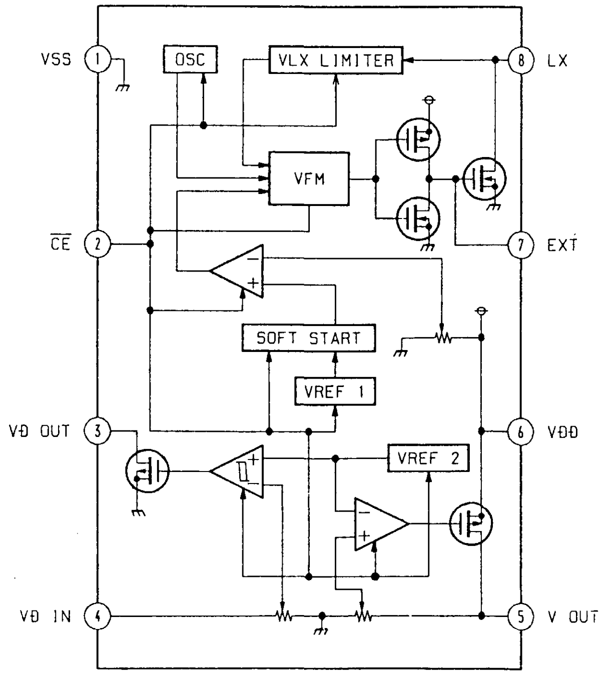
IC605 CXK41V4400ATM-10


I/O1
I/O2
WE
RAS
A9
A0
A1
A2
A3
VCC
CLOCK No.2 GENERATOR
COLUMN ADDRESS BUFFER
REFRESH CONTROLLER
REFRESH COUNTER
ROW ADDRESS BUFFER
CLOCK No.1 GENERATOR
COLUMN DECODER
SENSE AMP I/O GATE
ROW DECODER
MEMORY ARRAY (1024X1024) X4
DATA OUTPUT BUFFER
DATA INPUT BUFFER
GND
I/O4
I/O3
CAS
OE
A8
A7
A6
A5
A4

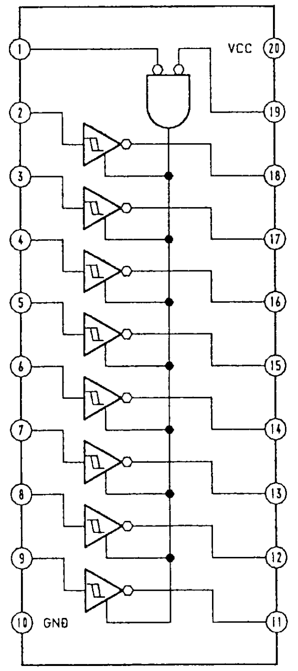
IC702 MPC1730VMEL


VG
C2H
C2L
C1H
C1L
VCC
SPR
SPF
TFDR
TRDR
OE
DGND
OSC
CHARGE PUMP
CMOS LOGIC
LEVEL SHIFTER
VG1
T+
T-
PGND
VD2
SP+
SP-
PGND

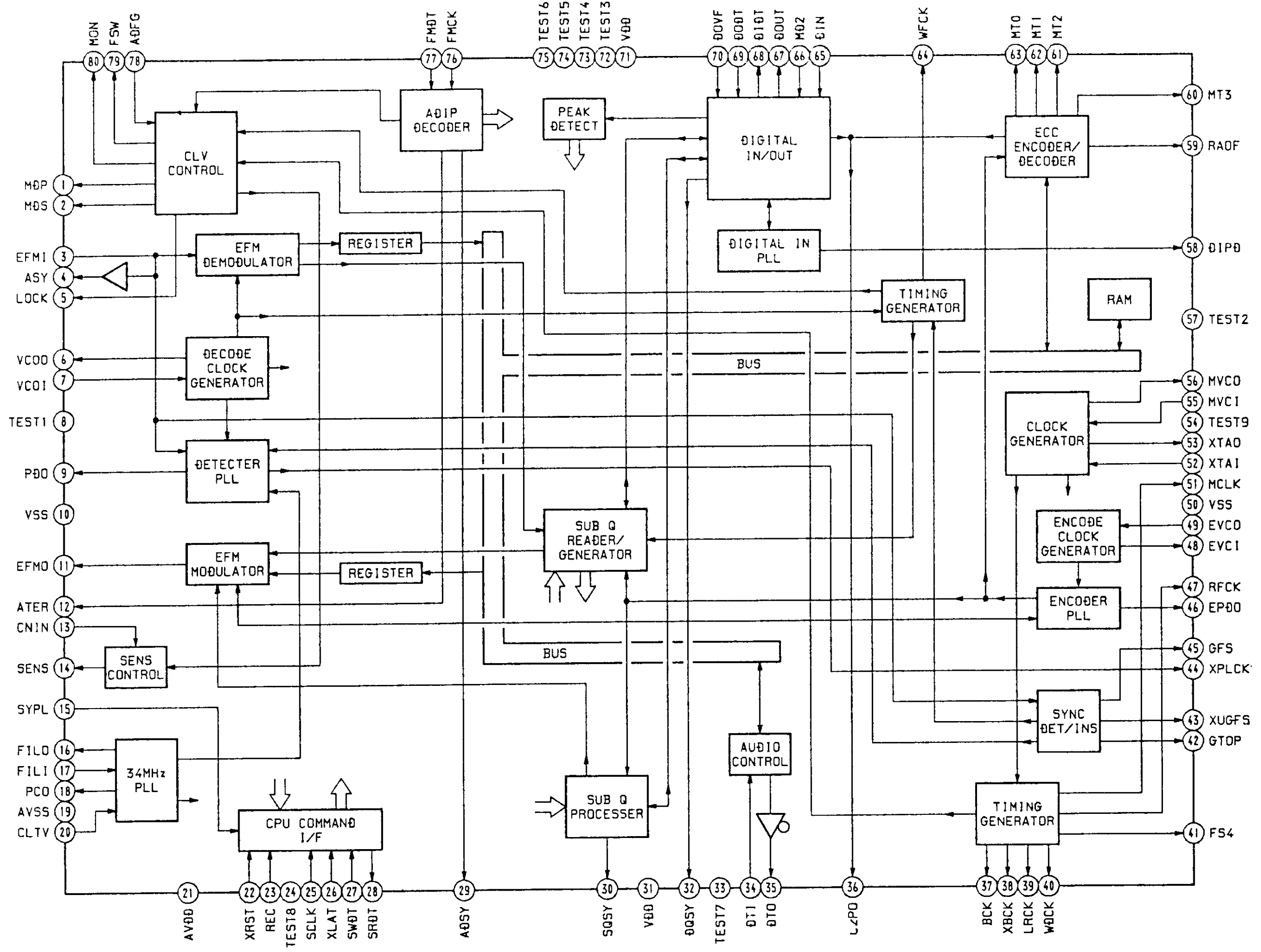
IC801 RS5RJ3720B


VSS
OSC
VLX LIMITER
VFM
SOFT START
VREF 1
VREF 2
LX
CE
EXT
VD OUT
VDD
VD IN
V OUT

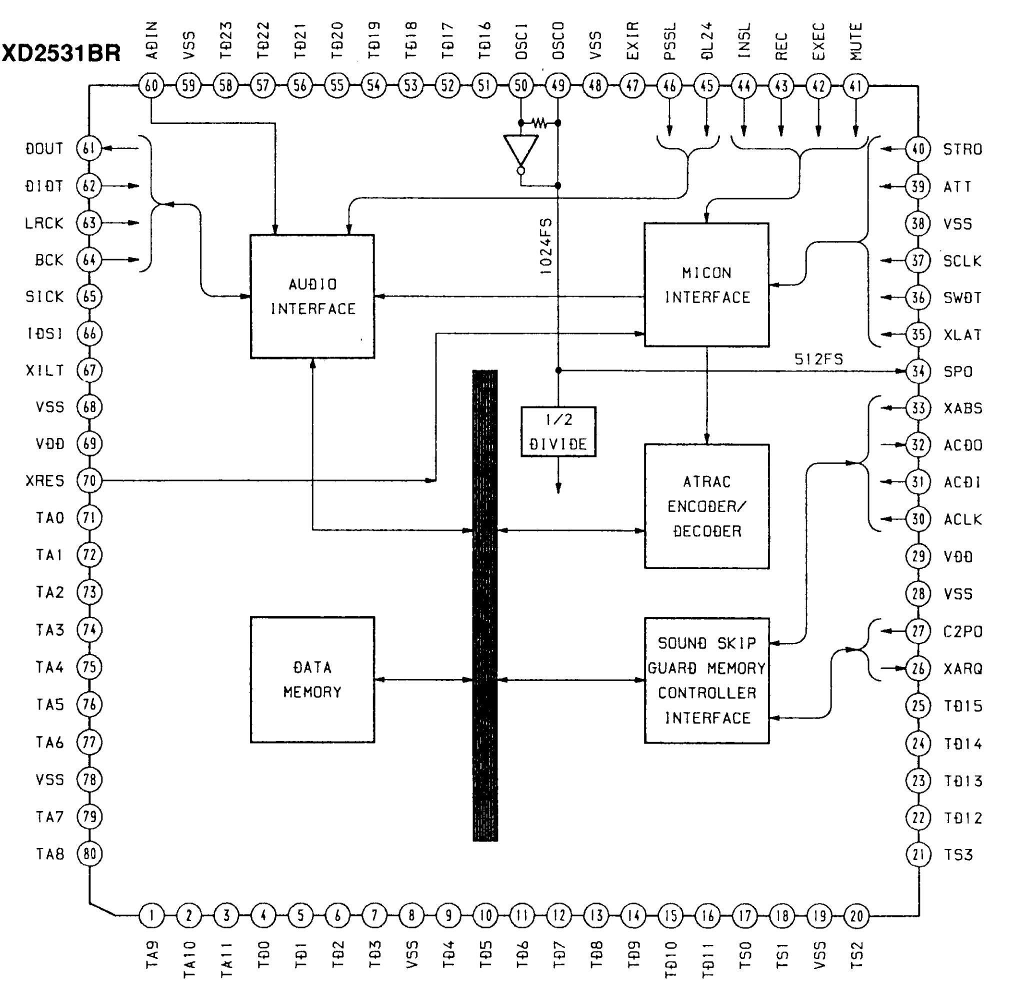
IC901 MC74ACT540DT



IC601 CXD2525R-1


CLV CONTROL
ADIP DECODER
PEAK DETECT
DIGITAL IN/OUT
ECC ENCODER/DECODER
EFM DEMODULATOR
REGISTER
DIGITAL IN PLL
TIMING GENERATOR
RAM
DECODE CLOCK GENERATOR
BUS
CLOCK GENERATOR
DETECTER PLL
SUB Q READER/GENERATOR
ENCODE CLOCK GENERATOR
EFM MODULATOR
REGISTER
ENCODER PLL
SENS CONTROL
BUS
SYNC DET/INS
34MHz PLL
CPU COMMAND I/F
SUB Q PROCESSER
AUDIO CONTROL
TIMING GENERATOR
MDP
MDS
EFMI
ASY
LOCK
VCOO
VCOI
TEST1
PDO
VSS
EFMO
ATER
CNIN
SENS
SYPL
FILO
FILI
PCO
AVSS
CLTV
MT3
RADF
DIPD
TEST2
MVCO
MVCI
TEST9
XTAO
XTAI
MCLK
VSS
EVCO
EVCI
RFCK
EPDO
GFS
XPLCK
XUGFS
GTOP
FS4
AVDD
XRST
REC
TEST8
SCLK
XLAT
SWDT
SRDT
ADSY
SQSY
VDD
DQSY
TEST7
DTI
DTO
LRPO
BCK
XBCK
LRCK
WDCK

IC603 CXD2531BR


AUDIO INTERFACE
MICON INTERFACE
1024FS
512FS
1/2 DIVIDE
ATRAC ENCODER/DECODER
DATA MEMORY
SOUND SKIP GUARD MEMORY CONTROLLER INTERFACE
DOUT
DIDT
LRCK
BCK
SICK
IOSI
XILT
VSS
VDD
XRES
TA0
TA1
TA2
TA3
TA4
TA5
TA6
VSS
TA7
TA8
STRO
ATT
VSS
SCLK
SWDT
XLAT
SPO
XABS
ACDO
ACDI
ACLK
VDD
VSS
C2PO
XARQ
TD15
TD14
TD13
TD12
TS3
TA9
TA10
TA11
TD0
TD1
TD2
TD3
VSS
TD4
TD5
TD6
TD7
TD8
TD9
TD10
TD11
TS0
TS1
VSS
TS2
ADIN
VSS
TD23
TD22
TD21
TD20
TD19
TD18
TD17
TD16
OSCI
OSCO
VSS
EXIR
PSSL
DL24
INSL
REC
EXEC
MUTE

SECTION 7
EXPLODED VIEWS

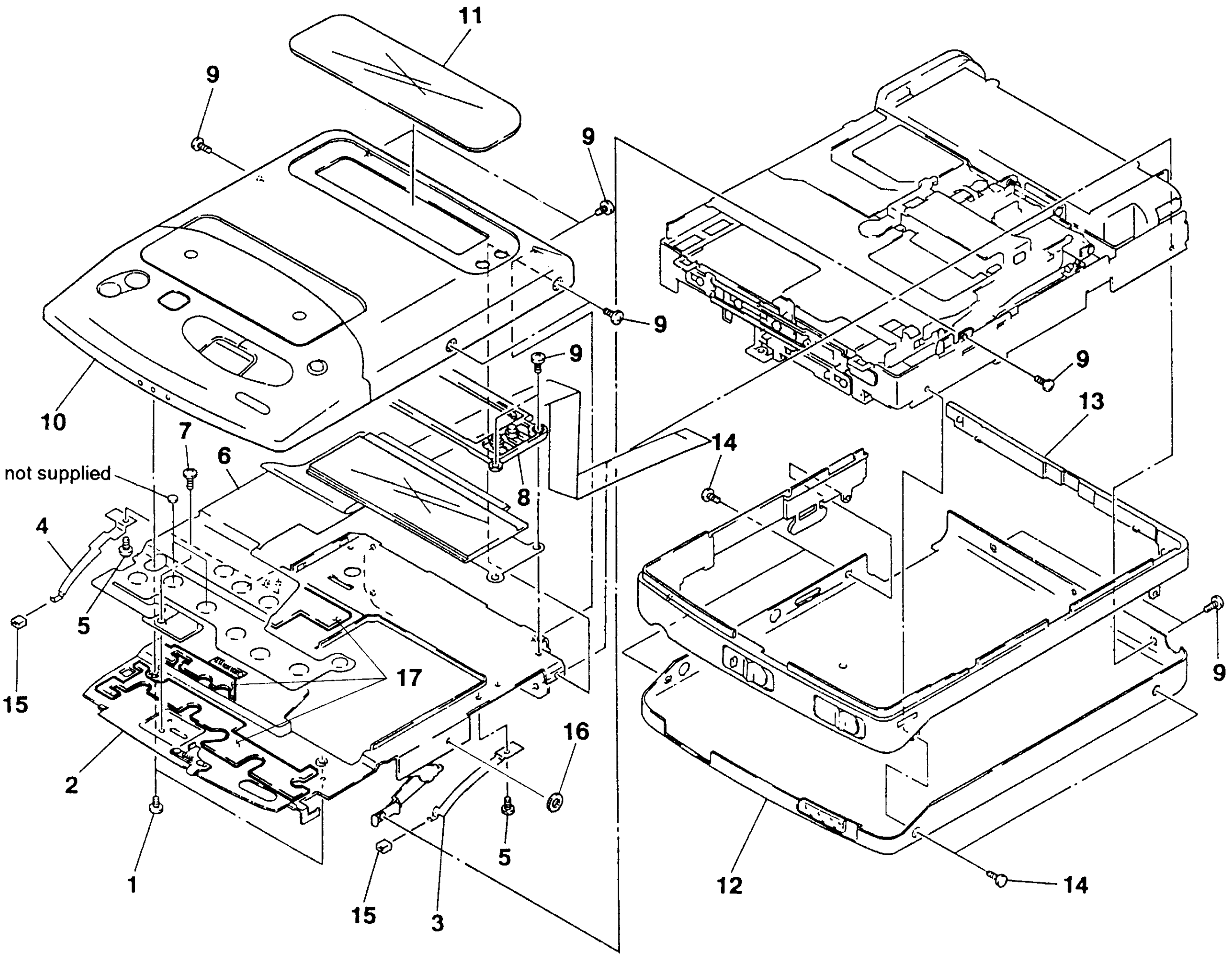
NOTE:

- Items marked " * " are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- Color Indication of Appearance Parts Example:
  KNOB, BALANCE (WHITE) . . . (RED)
  ↑ Parts color ↑ Cabinet's color
- -XX, -X mean standardized parts, so they may have some difference from the original one.
- The mechanical parts with no reference number in the exploded views are not supplied.
- Hardware (# mark) list and accessories and packing materials are given in the last of this parts list.
- CND : Canadian model
- AUS : Australian model
- JE : Tourist model

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

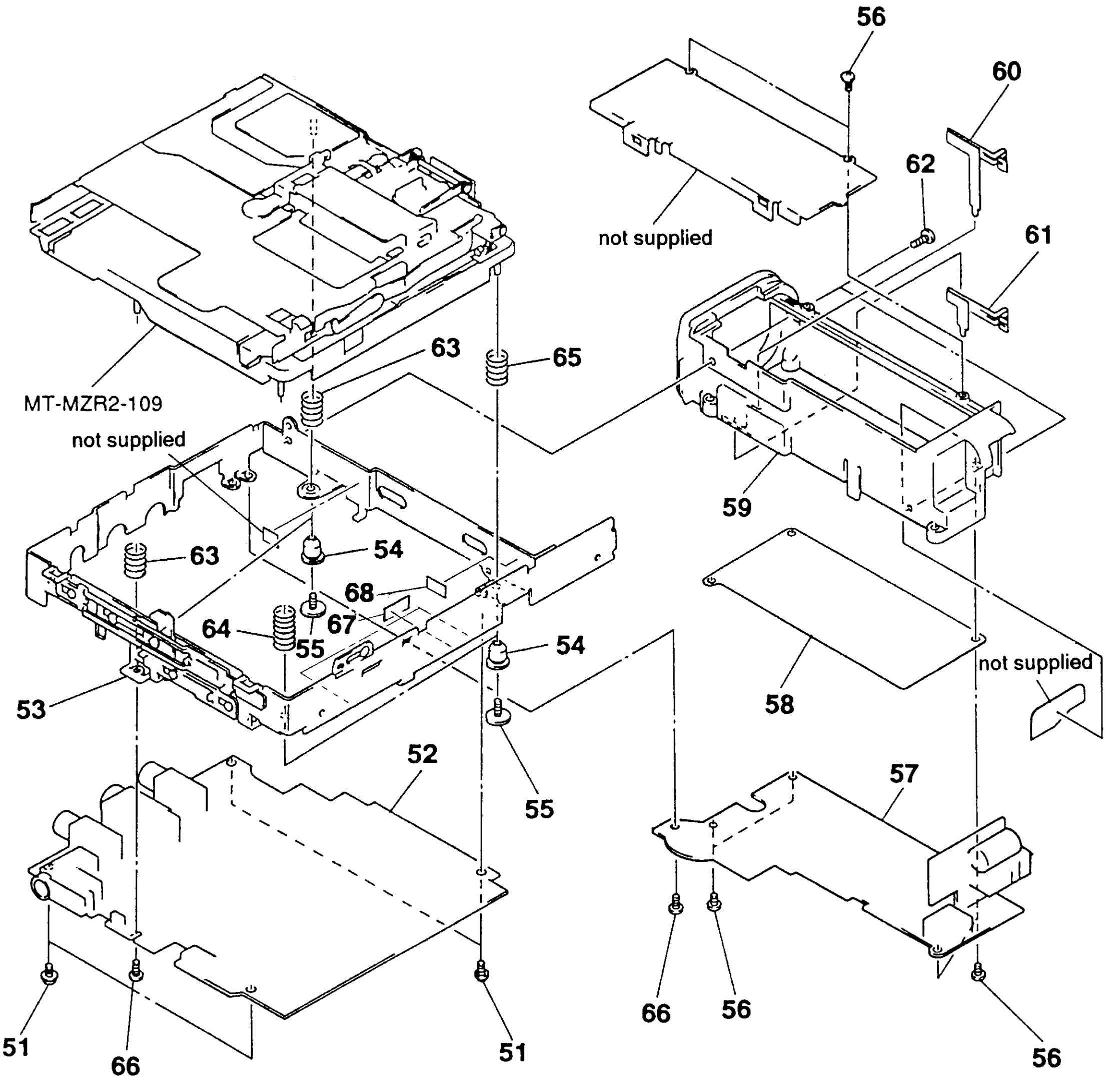
Les composants identifiés par une marque ⚠ sont critiques pour la sécurité.
Ne les remplacer que par une piéce portant le numéro spécifié.

7-1. CABINET BLOCK



Ref. No.	Part No.	Description	Remark
1	3-893-942-41	SCREW (1.7X3), TAPPING (B)	
2	X-4944-460-1	COVER ASSY, LID	
3	4-963-943-01	SPRING (MD RETAINER A), LEAF	
4	4-963-944-01	SPRING (MD RETAINER B), LEAF	
5	3-366-890-11	SCREW (M1.4)	
6	1-810-410-11	LCD MODULE	
7	3-366-890-01	SCREW (M1.4)	
8	4-963-946-01	HOLDER (LCD)	
9	3-704-197-03	SCREW (M1.4X1.6), LOCKING	
10	X-4944-459-1	PANEL ASSY, UPPER	
11	4-963-925-01	WINDOW (LCD)	
12	X-4944-457-1	PANEL ASSY, BOTTOM	
13	X-4944-453-1	PLATE(CABINET)ASSY, ORNAMENTAL	
14	3-704-197-13	SCREW (M1.4X2.0), LOCKING	
15	4-963-945-01	CUSHION (DAMPER)	
* 16	3-563-124-11	WASHER, RATTLE ABSORBER	
17	4-964-707-01	SHEET (LCD FLEXIBLE), ADHESIVE	

7-2. MAIN BOARD BLOCK


56
60
62
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61
MT-MZR2-109
not supplied
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not supplied
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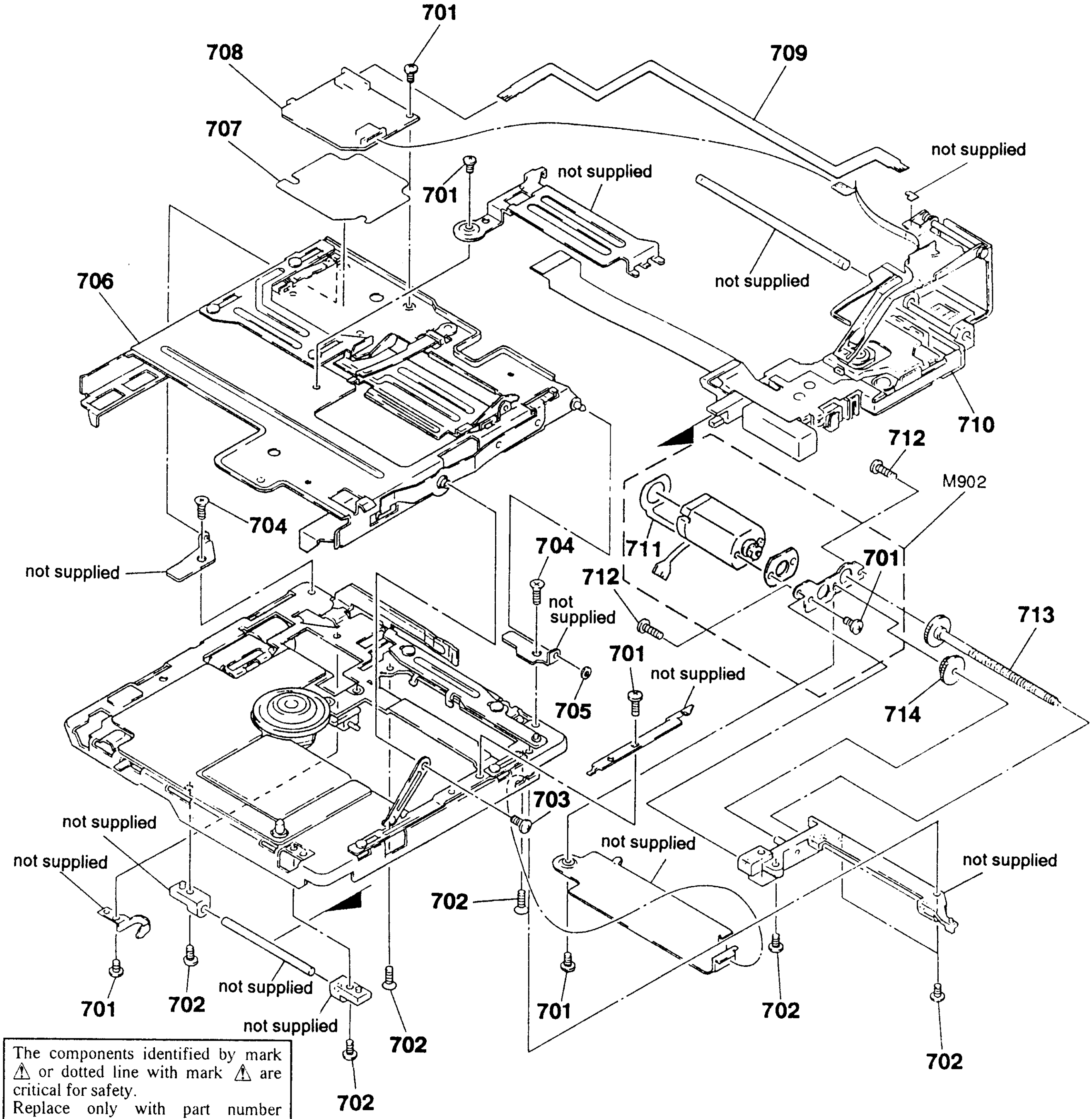
Ref. No.	Part No.	Description	Remark
51	3-335-797-01	SCREW (M1.4X2), TOOTHED LOCK	
52	A-3264-999-A	MAIN BOARD, COMPLETE (US, CND, AEP, UK, AUS)	
52	A-3276-264-A	MAIN BOARD, COMPLETE (E, JE)	
53	X-4944-452-1	CHASSIS ASSY, INNER	
54	4-963-909-01	DAMPER	
55	4-963-924-01	SCREW (DAMPER)	
56	3-893-942-41	SCREW (1.7X3), TAPPING (B)	
57	1-467-509-11	DD CONVERTER UNIT	
58	4-963-936-01	SHEET, INSULATING	
59	X-4944-458-1	CASE ASSY, BATTERY	
60	4-963-934-01	TERMINAL (PLUS), BATTERY	
61	4-963-935-01	TERMINAL (MINUS), BATTERY	
62	3-704-197-13	SCREW (M1.4X2.0), LOCKING	
63	4-963-922-01	SPRING (MD3), COMPRESSION	
64	4-963-911-01	SPRING (MD1), COMPRESSION	
65	4-963-912-01	SPRING (MD2), COMPRESSION	
66	3-348-160-71	SCREW (M1.4X2), PRECISION PAN	
* 67	3-303-838-00	SHEET, REC. SW	
* 68	3-335-905-01	SHEET	

7-3. MECHANISM DECK 1 (MT-MZR2-109)


701
708
709
707
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not supplied
706
710
712
M902
704
704
not supplied
711
701
712
not supplied
713
701
not supplied
705
714
703
not supplied
not supplied
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702
not supplied
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not supplied
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702

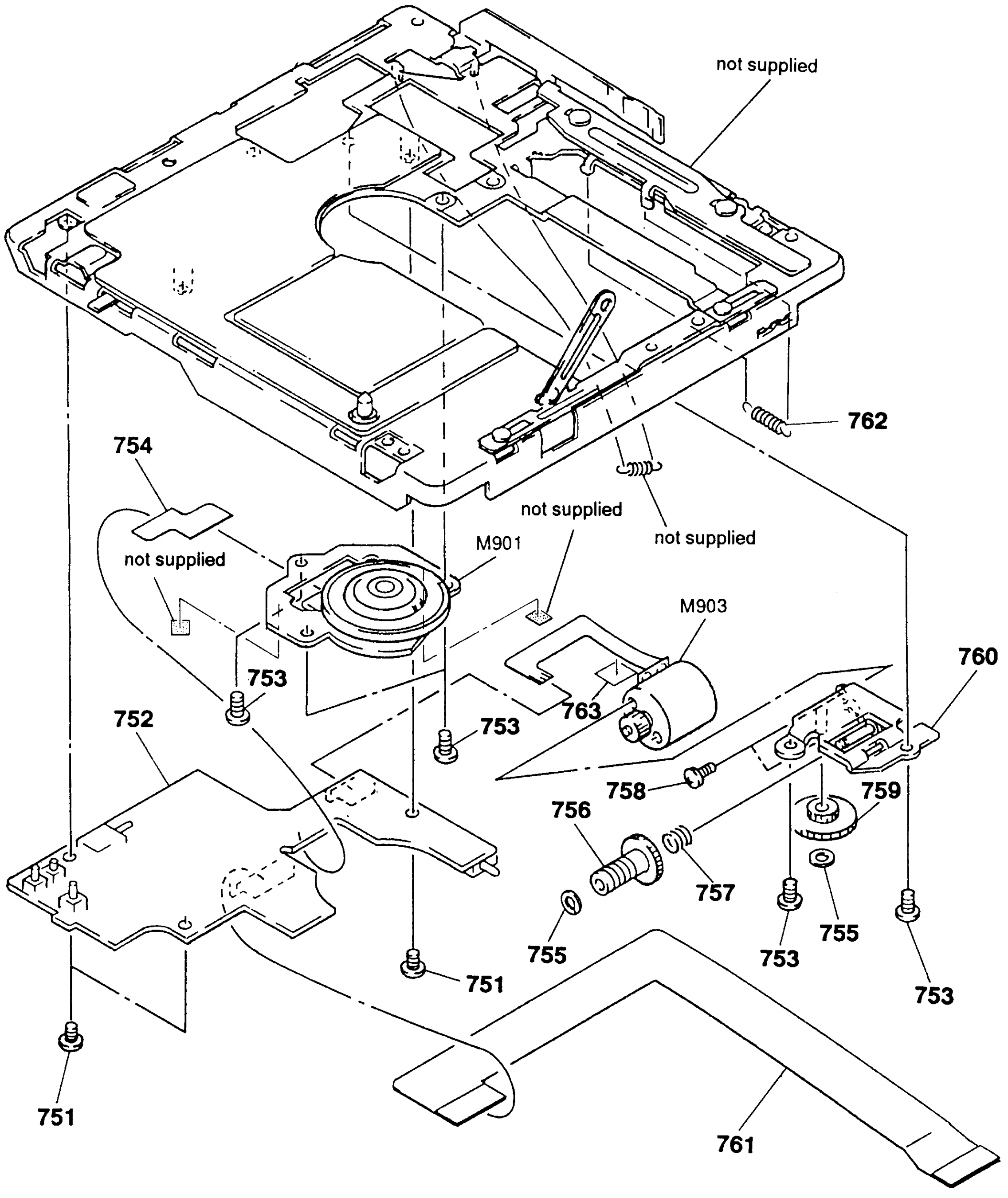
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

Les composants identifiés par une marque ⚠ sont critiques pour la sécurité.
Ne les remplacer que par une piéce portant le numéro spécifié.

Ref. No.	Part No.	Description	Remark
701	3-366-890-11	SCREW (M1.4)	
702	3-704-197-33	SCREW (M1.4X3.0), LOCKING	
703	4-963-883-31	SCREW (M1.4), PRECISION PAN	
704	4-964-538-01	SCREW (M1.4X2)	
705	3-338-645-31	WASHER (0.8-2.5)	
706	X-4944-451-1	HOLDER ASSY	
707	4-964-223-01	SHEET(REC PC BOARD), INSULATING	
* 708	1-651-019-11	REC BOARD	

Ref. No.	Part No.	Description	Remark
709	1-651-016-11	REC FLEXIBLE BOARD	
⚠710	A-3300-221-A	OPTICAL PICK-UP BLOCK	
711	1-651-018-11	SLED FLEXIBLE BOARD	
712	4-964-537-01	SCREW (M1.4X4.5), TAPPING	
713	A-3300-218-A	SCREW BLOCK ASSY, LEAD	
714	4-963-904-01	GEAR (B)	
M902	A-3300-219-A	MOTOR BLOCK ASSY, SLED	

7-4. MECHANISM DECK 2 (MT-MZR2-109)


not supplied
762
754
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M901
not supplied
not supplied
M903
760
753
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761

Ref. No.	Part No.	Description	Remark
751	3-366-890-11	SCREW (M1.4)	
752	A-3276-233-A	MECHA CON BOARD, COMPLETE	
753	4-955-841-01	SCREW	
754	1-651-017-11	CLV FLEXIBLE BOARD	
755	3-315-384-11	WASHER, STOPPER	
756	4-963-901-01	GEAR, WORM	
757	4-963-902-01	SPRING, COMPRESSION	
758	4-964-564-01	SCREW (M1.2X1.6)	
759	4-963-898-01	GEAR (WORM WHEEL)	
760	X-4944-449-2	CHASSIS ASSY, GEAR	
761	1-651-015-11	MD FLEXIBLE BOARD	
762	4-963-900-01	SPRING (LOCK), TENSION	
763	3-309-595-11	SHEET, INSULATING, PACK	
M901	1-698-313-11	MOTOR	
M903	A-3300-216-A	STEPPER BLOCK ASSY	

SECTION 8
ELECTRICAL PARTS LIST

MAIN

NOTE:

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

Les composants identifiés par une marque ⚠ sont critiques pour la sécurité.
Ne les remplacer que par une piéce portant le numéro spécifié.

When indicating parts by reference number, please include the board name.

- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- -XX, -X mean standardized parts, so they may have some difference from the original one.
- Color Indication of Appearance Parts Example:
  KNOB, BALANCE (WHITE) . . . (RED)
  ↑ Parts color ↑ Cabinet's color
- CND : Canadian model
- AUS : Australian model
- JE : Tourist model

- RESISTORS
  All resistors are in ohms
  METAL: Metal-film resistor
  METAL OXIDE: Metal Oxide-film resistor
  F : nonflammable
- SEMICONDUCTORS
  In each case, u: μ , for example:
  uA...: μA..., uPA...: μPA...,
  uPB...: μPB..., uPC...: μPC...,
  uPD...: μPD...
- CAPACITORS
  uF : μF
- COILS
  uH : μH

Ref. No.	Part No.	Description			Remark
	A-3264-999-A	MAIN BOARD, COMPLETE (EXCEPT E, JE)			
		***********************************			
	A-3276-264-A	MAIN BOARD, COMPLETE (E, JE)			
		***************************			
*	3-556-804-01	SHEET (F), ADHESIVE			
	3-831-441-XX	SPACER, KNOB			
		< CAPACITOR >			
C101	1-164-937-11	CERAMIC CHIP	0.001uF	10%	16V
C102	1-164-874-11	CERAMIC CHIP	100PF	5%	16V
C103	1-107-812-11	TANTAL. CHIP	4.7uF	20%	6.3V
C104	1-164-937-11	CERAMIC CHIP	0.001uF	10%	16V
C105	1-164-730-11	CERAMIC CHIP	0.0012uF	10%	50V
C106	1-107-813-11	TANTAL. CHIP	10uF	20%	6.3V
C107	1-135-337-11	TANTAL. CHIP	1uF	20%	6.3V
C108	1-135-337-11	TANTAL. CHIP	1uF	20%	6.3V
C109	1-107-811-11	TANTAL. CHIP	47uF	20%	4V
C110	1-135-337-11	TANTAL. CHIP	1uF	20%	6.3V
C111	1-164-949-11	CERAMIC CHIP	0.047uF		16V
C112	1-164-937-11	CERAMIC CHIP	0.001uF	10%	16V
C113	1-164-864-11	CERAMIC CHIP	39PF	5%	16V
C114	1-107-815-11	TANTAL. CHIP	2.2uF	20%	4V
C115	1-164-473-11	CERAMIC CHIP	820PF	10%	50V
C116	1-164-874-11	CERAMIC CHIP	100PF	5%	16V
C117	1-164-868-11	CERAMIC CHIP	56PF	5%	16V
C118	1-164-876-11	CERAMIC CHIP	120PF	5%	16V
C119	1-164-870-11	CERAMIC CHIP	68PF	5%	16V
C120	1-164-876-11	CERAMIC CHIP	120PF	5%	16V
C121	1-104-551-11	FILM CHIP	0.01uF	5%	16V
C122	1-135-337-11	TANTAL. CHIP	1uF	20%	6.3V
C123	1-164-939-11	CERAMIC CHIP	0.0022uF	10%	16V
C124	1-135-337-11	TANTAL. CHIP	1uF	20%	6.3V
C125	1-165-128-11	CERAMIC CHIP	0.22uF		16V
C126	1-164-876-11	CERAMIC CHIP	120PF	5%	16V
C129	1-164-949-11	CERAMIC CHIP	0.047uF		16V
C131	1-107-812-11	TANTAL. CHIP	4.7uF	20%	6.3V
C133	1-164-937-11	CERAMIC CHIP	0.001uF	10%	16V (EXCEPT E, JE)
C134	1-164-937-11	CERAMIC CHIP	0.001uF	10%	16V (EXCEPT E, JE)
C135	1-164-937-11	CERAMIC CHIP	0.001uF	10%	16V (EXCEPT E, JE)
C201	1-164-937-11	CERAMIC CHIP	0.001uF	10%	16V
C202	1-164-874-11	CERAMIC CHIP	100PF	5%	16V
C203	1-107-812-11	TANTAL. CHIP	4.7uF	20%	6.3V
C204	1-164-937-11	CERAMIC CHIP	0.001uF	10%	16V
C205	1-164-730-11	CERAMIC CHIP	0.0012uF	10%	50V
C206	1-107-813-11	TANTAL. CHIP	10uF	20%	6.3V
C207	1-135-337-11	TANTAL. CHIP	1uF	20%	6.3V
C208	1-135-337-11	TANTAL. CHIP	1uF	20%	6.3V
C209	1-107-811-11	TANTAL. CHIP	47uF	20%	4V
C210	1-135-337-11	TANTAL. CHIP	1uF	20%	6.3V
C211	1-164-949-11	CERAMIC CHIP	0.047uF		16V
C212	1-164-937-11	CERAMIC CHIP	0.001uF	10%	16V
C213	1-164-864-11	CERAMIC CHIP	39PF	5%	16V
C214	1-107-815-11	TANTAL. CHIP	2.2uF	20%	4V
C215	1-164-473-11	CERAMIC CHIP	820PF	10%	50V
C216	1-164-874-11	CERAMIC CHIP	100PF	5%	16V
C217	1-164-868-11	CERAMIC CHIP	56PF	5%	16V
C218	1-164-876-11	CERAMIC CHIP	120PF	5%	16V
C219	1-164-870-11	CERAMIC CHIP	68PF	5%	16V
C220	1-164-876-11	CERAMIC CHIP	120PF	5%	16V
C221	1-104-551-11	FILM CHIP	0.01uF	5%	16V
C222	1-135-337-11	TANTAL. CHIP	1uF	20%	6.3V
C223	1-164-939-11	CERAMIC CHIP	0.0022uF	10%	16V
C224	1-135-337-11	TANTAL. CHIP	1uF	20%	6.3V
C225	1-165-128-11	CERAMIC CHIP	0.22uF		16V
C226	1-164-876-11	CERAMIC CHIP	120PF	5%	16V
C229	1-164-949-11	CERAMIC CHIP	0.047uF		16V
C231	1-107-812-11	TANTAL. CHIP	4.7uF	20%	6.3V
C233	1-164-937-11	CERAMIC CHIP	0.001uF	10%	16V (EXCEPT E, JE)
C234	1-164-937-11	CERAMIC CHIP	0.001uF	10%	16V (EXCEPT E, JE)
C235	1-164-937-11	CERAMIC CHIP	0.001uF	10%	16V (EXCEPT E, JE)
C301	1-104-630-11	TANTAL. CHIP	33uF	20%	6.3V
C302	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C303	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V
C304	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C308	1-135-337-11	TANTAL. CHIP	1uF	20%	6.3V
C309	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V
C310	1-164-949-11	CERAMIC CHIP	0.047uF		16V
C311	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C312	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V

MAIN

Ref. No.	Part No.	Description				Remark
C313	1-104-847-11	TANTAL. CHIP	22uF	20%	4V	
C314	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V	
C315	1-104-847-11	TANTAL. CHIP	22uF	20%	4V	
C316	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V	
C317	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V	
C318	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V	
C319	1-107-813-11	TANTAL. CHIP	10uF	20%	6.3V	
C320	1-135-337-11	TANTAL. CHIP	1uF	20%	6.3V	
C321	1-104-929-11	TANTAL. CHIP	22uF	20%	6.3V	
C322	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V	
C324	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V	
C325	1-164-346-11	CERAMIC CHIP	1uF		16V	
C326	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V	
C327	1-164-949-11	CERAMIC CHIP	0.047uF		16V	
C328	1-164-937-11	CERAMIC CHIP	0.001uF	10%	16V	
C329	1-164-949-11	CERAMIC CHIP	0.047uF		16V	
C330	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V	
C333	1-164-360-11	CERAMIC CHIP	0.1uF		16V	
C334	1-104-847-11	TANTAL. CHIP	22uF	20%	4V	
C335	1-104-847-11	TANTAL. CHIP	22uF	20%	4V	
C336	1-135-180-21	TANTALUM CHIP	3.3uF	20%	6.3V	
C337	1-107-812-11	TANTAL. CHIP	4.7uF	20%	6.3V	
C338	1-107-812-11	TANTAL. CHIP	4.7uF	20%	6.3V	
C340	1-104-630-11	TANTAL. CHIP	33uF	20%	6.3V	
C341	1-104-630-11	TANTAL. CHIP	33uF	20%	6.3V	
C342	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V	
C343	1-135-337-11	TANTAL. CHIP	1uF	20%	6.3V	
C344	1-107-815-11	TANTAL. CHIP	2.2uF	20%	4V	
C345	1-135-180-21	TANTALUM CHIP	3.3uF	20%	6.3V	
C346	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V	
C347	1-107-816-11	TANTAL. CHIP	0.68uF	20%	10V	
C348	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V	
C350	1-164-874-11	CERAMIC CHIP	100PF	5%	16V	
C351	1-164-949-11	CERAMIC CHIP	0.047uF		16V	
C352	1-164-949-11	CERAMIC CHIP	0.047uF		16V	
C354	1-107-816-11	TANTAL. CHIP	0.68uF	20%	10V	
C355	1-107-813-11	TANTAL. CHIP	10uF	20%	6.3V	
C358	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V	
C359	1-164-937-11	CERAMIC CHIP	0.001uF	10%	16V	(EXCEPT E, JE)
C366	1-164-937-11	CERAMIC CHIP	0.001uF	10%	16V	(EXCEPT E, JE)
C368	1-164-937-11	CERAMIC CHIP	0.001uF	10%	16V	(EXCEPT E, JE)
C369	1-164-937-11	CERAMIC CHIP	0.001uF	10%	16V	(EXCEPT E, JE)
C501	1-104-929-11	TANTAL. CHIP	22uF	20%	6.3V	
C502	1-104-847-11	TANTAL. CHIP	22uF	20%	4V	
C503	1-104-847-11	TANTAL. CHIP	22uF	20%	4V	
C504	1-107-811-11	TANTAL. CHIP	47uF	20%	4V	
C506	1-107-813-11	TANTAL. CHIP	10uF	20%	6.3V	

Ref. No.	Part No.	Description				Remark
C508	1-164-937-11	CERAMIC CHIP	0.001uF	10%	16V	
C509	1-107-811-11	TANTAL. CHIP	47uF	20%	4V	
C510	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V	
C511	1-164-937-11	CERAMIC CHIP	0.001uF	10%	16V	
C512	1-164-939-11	CERAMIC CHIP	0.0022uF	10%	16V	
C513	1-164-937-11	CERAMIC CHIP	0.001uF	10%	16V	
C514	1-165-176-11	CERAMIC CHIP	0.047uF	10%	16V	
C519	1-104-929-11	TANTAL. CHIP	22uF	20%	6.3V	
C520	1-164-937-11	CERAMIC CHIP	0.001uF	10%	16V	
C521	1-164-227-11	CERAMIC CHIP	0.022uF	10%	25V	
C522	1-135-191-21	TANTAL. CHIP	0.22uF	10%	20V	
C523	1-164-360-11	CERAMIC CHIP	0.1uF		16V	
C524	1-164-677-11	CERAMIC CHIP	0.033uF	10%	16V	
C525	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V	
C526	1-164-949-11	CERAMIC CHIP	0.047uF		16V	
C527	1-162-979-11	CERAMIC CHIP	0.0027uF	10%	50V	
C529	1-164-939-11	CERAMIC CHIP	0.0022uF	10%	16V	
C530	1-164-874-11	CERAMIC CHIP	100PF	5%	16V	
C531	1-164-941-11	CERAMIC CHIP	0.0047uF	10%	16V	
C532	1-104-847-11	TANTAL. CHIP	22uF	20%	4V	
C533	1-104-847-11	TANTAL. CHIP	22uF	20%	4V	
C534	1-164-227-11	CERAMIC CHIP	0.022uF	10%	25V	
C535	1-164-933-11	CERAMIC CHIP	220PF	10%	16V	
C536	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V	
C537	1-135-181-21	TANTALUM CHIP	4.7uF	20%	6.3V	
C538	1-164-949-11	CERAMIC CHIP	0.047uF		16V	
C539	1-164-489-11	CERAMIC CHIP	0.22uF	10%	16V	
C540	1-165-112-11	CERAMIC CHIP	0.33uF		16V	
C541	1-164-941-11	CERAMIC CHIP	0.0047uF	10%	16V	
C542	1-104-813-11	TANTAL. CHIP	10uF	20%	16V	
C543	1-164-005-11	CERAMIC CHIP	0.47uF		25V	
C544	1-164-005-11	CERAMIC CHIP	0.47uF		25V	
C545	1-164-937-11	CERAMIC CHIP	0.001uF	10%	16V	
C546	1-165-176-11	CERAMIC CHIP	0.047uF	10%	16V	
C547	1-164-874-11	CERAMIC CHIP	100PF	5%	16V	
C548	1-164-933-11	CERAMIC CHIP	220PF	10%	16V	
C549	1-164-490-11	CERAMIC CHIP	0.068uF		16V	
C550	1-164-677-11	CERAMIC CHIP	0.033uF	10%	16V	
C551	1-164-916-11	CERAMIC CHIP	82PF	5%	16V	
C552	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V	
C553	1-164-949-11	CERAMIC CHIP	0.047uF		16V	
C554	1-164-949-11	CERAMIC CHIP	0.047uF		16V	
C555	1-164-874-11	CERAMIC CHIP	100PF	5%	16V	
C556	1-107-811-11	TANTAL. CHIP	47uF	20%	4V	
C557	1-164-949-11	CERAMIC CHIP	0.047uF		16V	
C558	1-164-949-11	CERAMIC CHIP	0.047uF		16V	
C561	1-104-929-11	TANTAL. CHIP	22uF	20%	6.3V	
C565	1-164-937-11	CERAMIC CHIP	0.001uF	10%	16V	
C567	1-164-949-11	CERAMIC CHIP	0.047uF		16V	
C570	1-164-949-11	CERAMIC CHIP	0.047uF		16V	

Ref. No.	Part No.	Description			Remark
C572	1-104-929-11	TANTAL. CHIP	22uF	20%	6.3V
C574	1-164-005-11	CERAMIC CHIP	0.47uF		25V
C578	1-164-677-11	CERAMIC CHIP	0.033uF	10%	16V
C581	1-135-246-11	TANTAL. CHIP	33uF	20%	6.3V
C582	1-135-208-11	TANTAL. CHIP	1uF	10%	10V
C586	1-164-346-11	CERAMIC CHIP	1uF		16V
C587	1-164-346-11	CERAMIC CHIP	1uF		16V
C588	1-164-949-11	CERAMIC CHIP	0.047uF		16V
C589	1-164-346-11	CERAMIC CHIP	1uF		16V
C590	1-164-346-11	CERAMIC CHIP	1uF		16V
C591	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C592	1-164-346-11	CERAMIC CHIP	1uF		16V
C593	1-164-949-11	CERAMIC CHIP	0.047uF		16V
C596	1-135-208-11	TANTAL. CHIP	1uF	10%	10V
C601	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C602	1-164-874-11	CERAMIC CHIP	100PF	5%	16V
C603	1-164-941-11	CERAMIC CHIP	0.0047uF	10%	16V
C604	1-164-227-11	CERAMIC CHIP	0.022uF	10%	25V
C605	1-164-850-11	CERAMIC CHIP	10PF	0.5PF	16V
C606	1-162-952-11	CERAMIC CHIP	82PF	5%	50V
C608	1-164-949-11	CERAMIC CHIP	0.047uF		16V
C622	1-107-813-11	TANTAL. CHIP	10uF	20%	6.3V
C623	1-164-949-11	CERAMIC CHIP	0.047uF		16V
C624	1-104-700-11	CERAMIC CHIP	0.027uF	10%	16V
C626	1-164-005-11	CERAMIC CHIP	0.47uF		25V
C627	1-164-949-11	CERAMIC CHIP	0.047uF		16V
C628	1-164-949-11	CERAMIC CHIP	0.047uF		16V
C629	1-164-949-11	CERAMIC CHIP	0.047uF		16V
C631	1-164-949-11	CERAMIC CHIP	0.047uF		16V
C632	1-164-949-11	CERAMIC CHIP	0.047uF		16V
C645	1-109-847-11	TANTAL. CHIP	0.47uF	20%	16V
C646	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C647	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C658	1-164-847-11	CERAMIC CHIP	7PF	0.5PF	16V
C659	1-164-847-11	CERAMIC CHIP	7PF	0.5PF	16V
C660	1-164-005-11	CERAMIC CHIP	0.47uF		25V
C661	1-165-112-11	CERAMIC CHIP	0.33uF		16V
C662	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C663	1-165-112-11	CERAMIC CHIP	0.33uF		16V
C664	1-107-820-11	CERAMIC CHIP	0.1uF		16V
C801	1-104-813-11	TANTAL. CHIP	10uF	20%	16V
C802	1-164-940-11	CERAMIC CHIP	0.0033uF	10%	16V
C803	1-164-940-11	CERAMIC CHIP	0.0033uF	10%	16V
C805	1-164-949-11	CERAMIC CHIP	0.047uF		16V
C806	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C808	1-164-850-11	CERAMIC CHIP	10PF	0.5PF	16V
C809	1-164-850-11	CERAMIC CHIP	10PF	0.5PF	16V
C810	1-164-949-11	CERAMIC CHIP	0.047uF		16V
C811	1-164-949-11	CERAMIC CHIP	0.047uF		16V
C813	1-164-949-11	CERAMIC CHIP	0.047uF		16V

Ref. No.	Part No.	Description			Remark
C815	1-164-949-11	CERAMIC CHIP	0.047uF		16V
C820	1-164-949-11	CERAMIC CHIP	0.047uF		16V
C821	1-164-949-11	CERAMIC CHIP	0.047uF		16V
C822	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C823	1-164-936-11	CERAMIC CHIP	680PF	10%	16V
C824	1-164-949-11	CERAMIC CHIP	0.047uF		16V
C826	1-164-949-11	CERAMIC CHIP	0.047uF		16V
C827	1-164-949-11	CERAMIC CHIP	0.047uF		16V
C830	1-164-346-11	CERAMIC CHIP	1uF		16V
C831	1-165-176-11	CERAMIC CHIP	0.047uF	10%	16V
C832	1-165-112-11	CERAMIC CHIP	0.33uF		16V
C833	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C834	1-104-630-11	TANTAL. CHIP	33uF	20%	6.3V
C835	1-164-937-11	CERAMIC CHIP	0.001uF	10%	16V
C838	1-164-949-11	CERAMIC CHIP	0.047uF		16V
C839	1-164-949-11	CERAMIC CHIP	0.047uF		16V
C840	1-165-112-11	CERAMIC CHIP	0.33uF		16V
C841	1-164-949-11	CERAMIC CHIP	0.047uF		16V
C842	1-164-949-11	CERAMIC CHIP	0.047uF		16V
C843	1-164-949-11	CERAMIC CHIP	0.047uF		16V
C844	1-164-949-11	CERAMIC CHIP	0.047uF		16V
C5013	1-164-245-11	CERAMIC CHIP	0.015uF	10%	25V
C5014	1-164-245-11	CERAMIC CHIP	0.015uF	10%	25V
C5015	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C5016	1-164-949-11	CERAMIC CHIP	0.047uF		16V
C5022	1-164-363-11	CERAMIC CHIP	560PF	5%	50V
C5026	1-164-935-11	CERAMIC CHIP	470PF	10%	16V
C5030	1-164-941-11	CERAMIC CHIP	0.0047uF	10%	16V
C5031	1-107-814-11	TANTAL. CHIP	33uF	20%	10V
C5056	1-164-935-11	CERAMIC CHIP	470PF	10%	16V
C5057	1-164-937-11	CERAMIC CHIP	0.001uF	10%	16V (EXCEPT E, JE)
C5059	1-165-176-11	CERAMIC CHIP	0.047uF	10%	16V
C5092	1-164-940-11	CERAMIC CHIP	0.0033uF	10%	16V
C5094	1-107-814-11	TANTAL. CHIP	33uF	20%	10V
C5095	1-104-700-11	CERAMIC CHIP	0.027uF	10%	16V
C5096	1-164-940-11	CERAMIC CHIP	0.0033uF	10%	16V
C5097	1-107-817-11	TANTAL. CHIP	0.33uF	20%	16V
C5098	1-164-360-11	CERAMIC CHIP	0.1uF		16V

< CONNECTOR >

Ref. No.	Part No.	Description
CN501	1-573-931-11	CONNECTOR, FFC/FPC (ZIF) 22P
CN801	1-573-927-11	CONNECTOR, FFC/FPC (ZIF) 18P
CN802	1-573-346-21	CONNECTOR, FFC/FPC 6P
CN803	1-573-357-11	CONNECTOR, FFC/FPC 17P
CN804	1-573-928-11	CONNECTOR, FFC/FPC (ZIF) 19P.

< DIODE >

Ref. No.	Part No.	Description	
D301	8-719-046-90	DIODE	MA2S111
D302	8-719-046-90	DIODE	MA2S111

MAIN

Ref. No.	Part No.	Description	Remark
D303	8-719-046-88	DIODE MA2S082	
D304	8-719-046-88	DIODE MA2S082	
D305	8-719-046-88	DIODE MA2S082	
D307	8-719-989-03	DIODE DAN222	
D308	8-719-989-00	DIODE DA221	
D309	8-719-989-03	DIODE DAN222	
D310	8-719-026-26	DIODE MA786WK	
D501	8-719-975-33	DIODE RB110C	
D504	8-719-023-69	DIODE SB007T03Q	
D505	8-719-031-17	DIODE SB007-03Q	
D506	8-719-046-88	DIODE MA2S082	
D601	8-719-981-25	DIODE KV1450	
D801	8-719-938-72	DIODE SB01-05CP	
D802	8-719-420-79	DIODE MA724	
D803	8-719-989-08	DIODE RB717F	
D804	8-719-046-84	DIODE MA2S728	
D805	8-719-988-82	DIODE RB715F	
D806	8-719-989-08	DIODE RB717F	
D808	8-719-033-72	LED CL-181UR-C-TS (REC →)	
D809	8-719-989-08	DIODE RB717F	
D810	8-719-989-08	DIODE RB717F	
D811	8-719-046-84	DIODE MA2S728	
D812	8-719-046-84	DIODE MA2S728	
D813	8-719-046-84	DIODE MA2S728	
D814	8-719-046-84	DIODE MA2S728	
		< FERRITE BEAD >	
FB103	1-414-385-11	INDUCTOR, FERRITE BEAD 1K	(EXCEPT E, JE)
FB135	1-414-385-11	INDUCTOR, FERRITE BEAD 1K	(EXCEPT E, JE)
FB203	1-414-385-11	INDUCTOR, FERRITE BEAD 1K	(EXCEPT E, JE)
FB235	1-414-385-11	INDUCTOR, FERRITE BEAD 1K	(EXCEPT E, JE)
FB301	1-414-228-11	INDUCTOR, FERRITE BEAD 600	
FB302	1-414-228-11	INDUCTOR, FERRITE BEAD 600	
FB303	1-414-228-11	INDUCTOR, FERRITE BEAD 600	
FB304	1-414-228-11	INDUCTOR, FERRITE BEAD 600	
FB305	1-414-228-11	INDUCTOR, FERRITE BEAD 600	(EXCEPT E, JE)
FB310	1-414-385-11	INDUCTOR, FERRITE BEAD 1K	(EXCEPT E, JE)
FB311	1-414-385-11	INDUCTOR, FERRITE BEAD 1K	(EXCEPT E, JE)
FB601	1-414-228-11	INDUCTOR, FERRITE BEAD 600	
FB602	1-414-228-11	INDUCTOR, FERRITE BEAD 600	
FB603	1-414-228-11	INDUCTOR, FERRITE BEAD 600	
FB610	1-414-385-11	INDUCTOR, FERRITE BEAD 1K	(EXCEPT E, JE)
FB623	1-414-385-11	INDUCTOR, FERRITE BEAD 1K	(EXCEPT E, JE)
FB840	1-414-228-11	INDUCTOR, FERRITE BEAD 600	(EXCEPT E, JE)
		< IC >	
IC301	8-759-257-94	IC TK11245AMTL	
IC302	8-759-711-85	IC NJM4580E-D	
IC303	8-759-512-62	IC CXA1497N	
IC304	8-759-252-90	IC TLV2362IPW-ELM1500	
IC305	8-759-252-90	IC TLV2362IPW-ELM1500	
IC306	8-759-252-39	IC AK4502-VS-E1	
IC307	8-759-252-90	IC TLV2362IPW-ELM1500	
IC308	8-759-166-95	IC LA4805V-TLM	
IC309	8-759-165-04	IC TK11230MTL	
IC310	8-759-234-77	IC TC4S66F	
IC311	8-759-252-43	IC TK15210MTL	
IC312	8-759-252-43	IC TK15210MTL	
IC314	8-759-255-51	IC DS1267E-50	
IC315	8-759-255-51	IC DS1267E-50	
IC316	8-759-710-79	IC NJM2107F	
IC317	8-759-234-77	IC TC4S66F	
IC318	8-759-255-92	IC XC62AP3201MR	
IC319	8-759-257-94	IC TK11245AMTL	
IC320	8-759-173-00	IC XC61AN1102MR	
IC501	8-752-068-49	IC CXA1861R	
IC502	8-752-064-33	IC CXA1380N	
IC505	8-759-082-60	IC TC7S66FU	
IC506	8-759-252-31	IC MB88347APFV-EF	
IC507	8-752-055-94	IC CXA1602R	
IC508	8-759-058-57	IC TC7S04FU-TE85L	
IC509	8-759-084-72	IC MPC1718FU	
IC510	8-759-058-61	IC TC7S08FU-TE85L	
IC511	8-759-252-38	IC CXD8498N-ELL2000	
IC512	8-759-710-79	IC NJM2107F	
IC513	8-759-255-49	IC DS1267E-10	
IC514	8-759-255-51	IC DS1267E-50	
IC515	8-759-082-60	IC TC7S66FU	
IC516	8-759-058-61	IC TC7S08FU	
IC517	8-759-259-06	IC XC61AN1902MR	
IC601	8-752-364-98	IC CXD2525R-1	
IC602	8-752-363-57	IC CXD2526AR	
IC603	8-752-365-90	IC CXD2531BR	
IC604	8-759-255-94	IC XC62AP3102MR	
IC605	8-752-362-58	IC CXK41V4400ATM-10	
IC606	8-759-082-61	IC TC4W53FU	
IC607	8-759-710-79	IC NJM2107F	
IC608	8-759-255-94	IC XC62AP3102MR	
IC801	8-759-252-27	IC RS5RJ3720B	
IC802	8-759-252-54	IC S-80745SL-A9	
IC803	8-759-267-57	IC MB89133A-PFM-170	
IC804	8-759-252-57	IC S-2900AUT	
IC805	8-752-852-81	IC CXP81848-603R	
IC806	8-759-252-29	IC S-80725SL-AN	
IC807	8-759-255-94	IC XC62AP3102MR	
IC808	8-759-082-61	IC TC4W53FU	
IC809	8-759-259-06	IC XC61AN1902MR	
IC810	8-759-259-06	IC XC61AN1902MR	
IC811	8-759-058-57	IC TC7S04FU	

Ref. No.	Part No.	Description	Remark
		< JACK >	
J201	8-759-252-45	IC GP1F365R (OPT/LINE IN)	
J301	1-764-460-21	JACK (MIC, PLUG IN POWER)	
J302	1-764-453-11	JACK (∩/REMOTE)	
J303	1-764-460-11	JACK (LINE OUT)	
		< COIL >	
L308	1-412-988-11	INDUCTOR 5.6uH (EXCEPT E, JE)	
L501	1-414-410-21	INDUCTOR (SMALL TYPE) 10.0uH	
L502	1-414-410-21	INDUCTOR (SMALL TYPE) 10.0uH	
L503	1-414-410-21	INDUCTOR (SMALL TYPE) 10.0uH	
L504	1-402-831-21	COIL, CHOKE 68uH	
L505	1-414-410-21	INDUCTOR (SMALL TYPE) 10.0uH	
L506	1-414-203-11	INDUCTOR 100uH	
L507	1-412-991-11	INDUCTOR 10uH	
L508	1-414-203-11	INDUCTOR 100uH	
L509	1-414-203-11	INDUCTOR 100uH	
L603	1-414-357-41	INDUCTOR 1uH	
L801	1-412-031-11	INDUCTOR CHIP 47uH	
		< LINE FILTER >	
LF301	1-403-601-21	FILTER, COMMON MODE (EXCEPT E, JE)	
LF302	1-403-601-21	FILTER, COMMON MODE	
LF303	1-403-601-21	FILTER, COMMON MODE (EXCEPT E, JE)	
LF304	1-403-601-21	FILTER, COMMON MODE (EXCEPT E, JE)	
		< TRANSISTOR >	
Q101	8-729-929-32	TRANSISTOR DTC144TE	
Q102	8-729-144-16	TRANSISTOR 2SD2228-D44D45	
Q201	8-729-929-32	TRANSISTOR DTC144TE	
Q202	8-729-144-16	TRANSISTOR 2SD2228-D44D45	
Q302	8-729-930-13	TRANSISTOR UMH2	
Q303	8-729-928-81	TRANSISTOR DTC144EE	
Q304	8-729-144-16	TRANSISTOR 2SD2228-D44D45	
Q305	8-729-928-31	TRANSISTOR DTA114YE	
Q306	8-729-927-99	TRANSISTOR 2SC4617	
Q307	8-729-928-81	TRANSISTOR DTC144EE	
Q308	8-729-928-81	TRANSISTOR DTC144EE	
Q309	8-729-930-00	TRANSISTOR UMD2	
Q310	8-729-930-05	TRANSISTOR UMD3	
Q311	8-729-930-00	TRANSISTOR UMD2	
Q312	8-729-928-19	TRANSISTOR 2SA1774R	
Q313	8-729-930-05	TRANSISTOR UMD3	
Q501	8-729-422-39	TRANSISTOR XN4404	
Q502	8-729-928-27	TRANSISTOR DTA144EE	
Q503	8-729-928-85	TRANSISTOR DTC114YE	
Q506	8-729-923-45	TRANSISTOR 2SB1308-QR	
Q508	8-729-928-81	TRANSISTOR DTC144EE	
Q510	8-729-023-89	TRANSISTOR 2SJ305	
Q511	8-729-927-59	TRANSISTOR UMZ1	
Q512	8-729-928-27	TRANSISTOR DTA144EE	
Q514	8-729-024-46	TRANSISTOR 2SK2035	
Q515	8-729-930-13	TRANSISTOR UMH2	
Q801	8-729-927-99	TRANSISTOR 2SC4617	
Q802	8-729-930-00	TRANSISTOR UMD2	
Q803	8-729-928-81	TRANSISTOR DTC144EE	
Q804	8-729-928-81	TRANSISTOR DTC144EE	
Q805	8-729-927-99	TRANSISTOR 2SC4617	
Q806	8-729-928-81	TRANSISTOR DTC144EE	
Q808	8-729-930-00	TRANSISTOR UMD2	
Q809	8-729-023-89	TRANSISTOR 2SJ305	
		< RESISTOR >	
R101	1-208-703-11	METAL CHIP 6.8K 0.50% 1/16W	
R102	1-218-975-11	METAL GLAZE 68K 5% 1/16W	
R103	1-216-864-11	METAL CHIP 0 5% 1/16W	(E, JE)
R107	1-208-699-11	METAL CHIP 4.7K 0.50% 1/16W	
R108	1-208-679-11	METAL CHIP 680 0.50% 1/16W	
R110	1-220-398-11	METAL GLAZE 1.5M 5% 1/16W	
R111	1-218-734-11	METAL CHIP 56K 0.50% 1/16W	
R112	1-208-714-11	METAL CHIP 20K 0.50% 1/16W	
R114	1-208-715-11	METAL CHIP 22K 0.50% 1/16W	
R115	1-208-681-11	METAL CHIP 820 0.50% 1/16W	
R116	1-208-715-11	METAL CHIP 22K 0.50% 1/16W	
R117	1-208-715-11	METAL CHIP 22K 0.50% 1/16W	
R118	1-208-715-11	METAL CHIP 22K 0.50% 1/16W	
R119	1-208-683-11	METAL CHIP 1K 0.50% 1/16W	
R120	1-208-683-11	METAL CHIP 1K 0.50% 1/16W	
R121	1-208-715-11	METAL CHIP 22K 0.50% 1/16W	
R122	1-208-715-11	METAL CHIP 22K 0.50% 1/16W	
R123	1-218-734-11	METAL CHIP 56K 0.50% 1/16W	
R124	1-208-715-11	METAL CHIP 22K 0.50% 1/16W	
R125	1-208-715-11	METAL CHIP 22K 0.50% 1/16W	
R126	1-218-736-11	METAL CHIP 68K 0.50% 1/16W	
R127	1-208-719-11	METAL CHIP 33K 0.50% 1/16W	
R128	1-208-719-11	METAL CHIP 33K 0.50% 1/16W	
R129	1-218-736-11	METAL CHIP 68K 0.50% 1/16W	
R130	1-208-696-11	METAL CHIP 3.6K 0.50% 1/16W	
R131	1-208-685-11	METAL CHIP 1.2K 0.50% 1/16W	
R132	1-218-989-11	METAL GLAZE 1M 5% 1/16W	
R133	1-216-789-11	METAL CHIP 2.2 5% 1/16W	
R134	1-208-683-11	METAL CHIP 1K 0.50% 1/16W	
R135	1-216-864-11	METAL CHIP 0 5% 1/16W	(E, JE)
R136	1-218-990-11	METAL GLAZE 0 5% 1/16W	
R139	1-218-945-11	METAL GLAZE 220 5% 1/16W	
R140	1-218-945-11	METAL GLAZE 220 5% 1/16W	
R141	1-218-977-11	METAL GLAZE 100K 5% 1/16W	
R142	1-218-990-11	METAL GLAZE 0 5% 1/16W	(E, JE)
R143	1-218-990-11	METAL GLAZE 0 5% 1/16W	(E, JE)
R144	1-218-990-11	METAL GLAZE 0 5% 1/16W	(E, JE)

MAIN

Ref. No.	Part No.	Description				Remark
R201	1-208-703-11	METAL CHIP	6.8K	0.50%	1/16W	
R202	1-218-975-11	METAL GLAZE	68K	5%	1/16W	
R203	1-216-864-11	METAL CHIP	0	5%	1/16W	(E, JE)
R207	1-208-699-11	METAL CHIP	4.7K	0.50%	1/16W	
R208	1-208-679-11	METAL CHIP	680	0.50%	1/16W	
R210	1-218-988-11	METAL GLAZE	820K	5%	1/16W	
R211	1-218-734-11	METAL CHIP	56K	0.50%	1/16W	
R212	1-208-714-11	METAL CHIP	20K	0.50%	1/16W	
R214	1-208-715-11	METAL CHIP	22K	0.50%	1/16W	
R215	1-208-681-11	METAL CHIP	820	0.50%	1/16W	
R216	1-208-715-11	METAL CHIP	22K	0.50%	1/16W	
R217	1-208-715-11	METAL CHIP	22K	0.50%	1/16W	
R218	1-208-715-11	METAL CHIP	22K	0.50%	1/16W	
R219	1-208-683-11	METAL CHIP	1K	0.50%	1/16W	
R220	1-208-683-11	METAL CHIP	1K	0.50%	1/16W	
R221	1-208-715-11	METAL CHIP	22K	0.50%	1/16W	
R222	1-208-715-11	METAL CHIP	22K	0.50%	1/16W	
R223	1-218-734-11	METAL CHIP	56K	0.50%	1/16W	
R224	1-208-715-11	METAL CHIP	22K	0.50%	1/16W	
R225	1-208-715-11	METAL CHIP	22K	0.50%	1/16W	
R226	1-218-736-11	METAL CHIP	68K	0.50%	1/16W	
R227	1-208-719-11	METAL CHIP	33K	0.50%	1/16W	
R228	1-208-719-11	METAL CHIP	33K	0.50%	1/16W	
R229	1-218-736-11	METAL CHIP	68K	0.50%	1/16W	
R230	1-208-696-11	METAL CHIP	3.6K	0.50%	1/16W	
R231	1-208-685-11	METAL CHIP	1.2K	0.50%	1/16W	
R232	1-218-989-11	METAL GLAZE	1M	5%	1/16W	
R233	1-216-789-11	METAL CHIP	2.2	5%	1/16W	
R234	1-208-683-11	METAL CHIP	1K	0.50%	1/16W	
R235	1-216-864-11	METAL CHIP	0	5%	1/16W	(E, JE)
R236	1-218-990-11	METAL GLAZE	0	5%	1/16W	
R239	1-218-945-11	METAL GLAZE	220	5%	1/16W	
R240	1-218-945-11	METAL GLAZE	220	5%	1/16W	
R241	1-218-977-11	METAL GLAZE	100K	5%	1/16W	
R242	1-218-990-11	METAL GLAZE	0	5%	1/16W	(E, JE)
R243	1-218-990-11	METAL GLAZE	0	5%	1/16W	(E, JE)
R244	1-218-990-11	METAL GLAZE	0	5%	1/16W	(E, JE)
R301	1-218-965-11	METAL GLAZE	10K	5%	1/16W	
R304	1-218-973-11	METAL GLAZE	47K	5%	1/16W	
R305	1-218-977-11	METAL GLAZE	100K	5%	1/16W	
R306	1-208-721-11	METAL CHIP	39K	0.50%	1/16W	
R307	1-208-715-11	METAL CHIP	22K	0.50%	1/16W	
R308	1-216-864-11	METAL CHIP	0	5%	1/16W	(E, JE)
R309	1-216-864-11	METAL CHIP	0	5%	1/16W	
R310	1-216-864-11	METAL CHIP	0	5%	1/16W	(E, JE)
R312	1-218-977-11	METAL GLAZE	100K	5%	1/16W	
R314	1-218-965-11	METAL GLAZE	10K	5%	1/16W	
R315	1-208-721-11	METAL CHIP	39K	0.50%	1/16W	
R316	1-220-209-11	METAL GLAZE	160K	5%	1/16W	
R317	1-208-719-11	METAL CHIP	33K	0.50%	1/16W	
R318	1-208-719-11	METAL CHIP	33K	0.50%	1/16W	
R319	1-218-965-11	METAL GLAZE	10K	5%	1/16W	
R320	1-216-861-11	METAL CHIP	2.2M	5%	1/16W	
R321	1-218-983-11	METAL GLAZE	330K	5%	1/16W	
R322	1-208-719-11	METAL CHIP	33K	0.50%	1/16W	
R323	1-208-681-11	METAL CHIP	820	0.50%	1/16W	
R324	1-218-965-11	METAL GLAZE	10K	5%	1/16W	
R325	1-220-162-11	METAL GLAZE	20	5%	1/16W	
R326	1-216-861-11	METAL CHIP	2.2M	5%	1/16W	
R327	1-208-691-11	METAL GLAZE	2.2K	0.5%	1/16W	
R328	1-208-691-11	METAL GLAZE	2.2K	0.5%	1/16W	
R329	1-208-715-11	METAL CHIP	22K	0.50%	1/16W	
R330	1-208-715-11	METAL CHIP	22K	0.50%	1/16W	
R331	1-218-975-11	METAL GLAZE	68K	5%	1/16W	
R332	1-218-965-11	METAL GLAZE	10K	5%	1/16W	
R333	1-208-699-11	METAL CHIP	4.7K	0.50%	1/16W	
R334	1-218-965-11	METAL GLAZE	10K	5%	1/16W	
R335	1-208-715-11	METAL CHIP	22K	0.50%	1/16W	
R337	1-216-789-11	METAL CHIP	2.2	5%	1/16W	
R343	1-208-720-11	METAL CHIP	36K	0.50%	1/16W	
R344	1-218-977-11	METAL GLAZE	100K	5%	1/16W	
R345	1-208-720-11	METAL CHIP	36K	0.50%	1/16W	
R346	1-218-967-11	METAL GLAZE	15K	5%	1/16W	
R347	1-218-977-11	METAL GLAZE	100K	5%	1/16W	
R348	1-218-977-11	METAL GLAZE	100K	5%	1/16W	
R350	1-218-990-11	METAL GLAZE	0	5%	1/16W	(E, JE)
R351	1-218-990-11	METAL GLAZE	0	5%	1/16W	(E, JE)
R352	1-218-990-11	METAL GLAZE	0	5%	1/16W	(E, JE)
R353	1-218-977-11	METAL GLAZE	100K	5%	1/16W	
R354	1-208-683-11	METAL CHIP	1K	0.50%	1/16W	
R355	1-218-979-11	METAL GLAZE	150K	5%	1/16W	
R356	1-218-985-11	METAL GLAZE	470K	5%	1/16W	
R357	1-208-721-11	METAL CHIP	39K	0.50%	1/16W	
R358	1-208-719-11	METAL CHIP	33K	0.50%	1/16W	
R359	1-216-864-11	METAL CHIP	0	5%	1/16W	
R501	1-218-979-11	METAL GLAZE	150K	5%	1/16W	
R502	1-218-950-11	METAL GLAZE	560	5%	1/16W	
R506	1-218-976-11	METAL GLAZE	82K	5%	1/16W	
R507	1-218-957-11	METAL GLAZE	2.2K	5%	1/16W	
R510	1-218-980-11	METAL GLAZE	180K	5%	1/16W	
R511	1-218-989-11	METAL GLAZE	1M	5%	1/16W	
R512	1-220-214-11	METAL GLAZE	430K	5%	1/16W	
R513	1-218-989-11	METAL GLAZE	1M	5%	1/16W	
R514	1-218-973-11	METAL GLAZE	47K	5%	1/16W	
R515	1-218-980-11	METAL GLAZE	180K	5%	1/16W	
R516	1-218-975-11	METAL GLAZE	68K	5%	1/16W	
R518	1-208-701-11	METAL CHIP	5.6K	0.50%	1/16W	
R519	1-208-679-11	METAL CHIP	680	0.50%	1/16W	
R520	1-218-989-11	METAL GLAZE	1M	5%	1/16W	
R521	1-208-715-11	METAL CHIP	22K	0.50%	1/16W	

Ref. No.	Part No.	Description				Remark
R522	1-208-701-11	METAL CHIP	5.6K	0.50%	1/16W	
R524	1-220-181-11	METAL GLAZE	750	5%	1/16W	
R525	1-208-701-11	METAL CHIP	5.6K	0.50%	1/16W	
R526	1-208-683-11	METAL CHIP	1K	0.50%	1/16W	
R527	1-218-967-11	METAL GLAZE	15K	5%	1/16W	
R529	1-208-717-11	METAL CHIP	27K	0.50%	1/16W	
R531	1-218-941-11	METAL GLAZE	100	5%	1/16W	
R533	1-218-945-11	METAL GLAZE	220	5%	1/16W	
R535	1-218-977-11	METAL GLAZE	100K	5%	1/16W	
R536	1-216-001-00	METAL CHIP	10	5%	1/10W	
R539	1-208-701-11	METAL CHIP	5.6K	0.50%	1/16W	
R540	1-208-699-11	METAL CHIP	4.7K	0.50%	1/16W	
R546	1-208-683-11	METAL CHIP	1K	0.50%	1/16W	
R547	1-218-957-11	METAL GLAZE	2.2K	5%	1/16W	
R549	1-218-957-11	METAL GLAZE	2.2K	5%	1/16W	
R550	1-218-978-11	METAL GLAZE	120K	5%	1/16W	
R551	1-218-989-11	METAL GLAZE	1M	5%	1/16W	
R553	1-218-968-11	METAL GLAZE	18K	5%	1/16W	
R556	1-208-715-11	METAL CHIP	22K	0.50%	1/16W	
R557	1-220-398-11	METAL GLAZE	1.5M	5%	1/16W	
R558	1-218-973-11	METAL GLAZE	47K	5%	1/16W	
R559	1-218-977-11	METAL GLAZE	100K	5%	1/16W	
R561	1-218-977-11	METAL GLAZE	100K	5%	1/16W	
R565	1-208-681-11	METAL CHIP	820	0.50%	1/16W	
R566	1-218-973-11	METAL GLAZE	47K	5%	1/16W	
R567	1-218-986-11	METAL GLAZE	560K	5%	1/16W	
R568	1-218-977-11	METAL GLAZE	100K	5%	1/16W	
R569	1-208-683-11	METAL CHIP	1K	0.50%	1/16W	
R571	1-218-949-11	METAL GLAZE	470	5%	1/16W	
R572	1-218-977-11	METAL GLAZE	100K	5%	1/16W	
R573	1-218-975-11	METAL GLAZE	68K	5%	1/16W	
R574	1-218-977-11	METAL GLAZE	100K	5%	1/16W	
R575	1-218-981-11	METAL GLAZE	220K	5%	1/16W	
R576	1-218-977-11	METAL GLAZE	100K	5%	1/16W	
R577	1-218-989-11	METAL GLAZE	1M	5%	1/16W	
R578	1-218-980-11	METAL GLAZE	180K	5%	1/16W	
R581	1-218-967-11	METAL GLAZE	15K	5%	1/16W	
R582	1-208-709-11	METAL CHIP	12K	0.50%	1/16W	
R590	1-218-983-11	METAL GLAZE	330K	5%	1/16W	
R592	1-218-977-11	METAL GLAZE	100K	5%	1/16W	
R593	1-218-977-11	METAL GLAZE	100K	5%	1/16W	
R594	1-218-977-11	METAL GLAZE	100K	5%	1/16W	
R601	1-218-967-11	METAL GLAZE	15K	5%	1/16W	
R602	1-218-965-11	METAL GLAZE	10K	5%	1/16W	
R603	1-208-703-11	METAL CHIP	6.8K	0.50%	1/16W	
R604	1-218-977-11	METAL GLAZE	100K	5%	1/16W	
R610	1-216-864-11	METAL CHIP	0	5%	1/16W	(E, JE)
R613	1-218-965-11	METAL GLAZE	10K	5%	1/16W	
R614	1-208-695-11	METAL CHIP	3.3K	0.50%	1/16W	
R615	1-218-965-11	METAL GLAZE	10K	5%	1/16W	
R617	1-216-864-11	METAL CHIP	0	5%	1/16W	
R623	1-216-864-11	METAL CHIP	0	5%	1/16W	(E, JE)
R630	1-216-864-11	METAL CHIP	0	5%	1/16W	
R631	1-218-990-11	METAL GLAZE	0	5%	1/16W	
R637	1-218-989-11	METAL GLAZE	1M	5%	1/16W	
R643	1-216-864-11	METAL CHIP	0	5%	1/16W	
R655	1-218-983-11	METAL GLAZE	330K	5%	1/16W	
R656	1-218-983-11	METAL GLAZE	330K	5%	1/16W	
R661	1-218-984-11	METAL GLAZE	390K	5%	1/16W	
R802	1-202-974-11	METAL GLAZE	3.3M	5%	1/16W	
R803	1-218-751-11	METAL CHIP	300K	0.50%	1/16W	
R804	1-218-744-11	METAL CHIP	150K	0.50%	1/16W	
R805	1-218-751-11	METAL CHIP	300K	0.50%	1/16W	
R806	1-218-744-11	METAL CHIP	150K	0.50%	1/16W	
R808	1-218-983-11	METAL GLAZE	330K	5%	1/16W	
R810	1-218-983-11	METAL GLAZE	330K	5%	1/16W	
R812	1-218-983-11	METAL GLAZE	330K	5%	1/16W	
R813	1-218-983-11	METAL GLAZE	330K	5%	1/16W	
R814	1-218-983-11	METAL GLAZE	330K	5%	1/16W	
R815	1-218-989-11	METAL GLAZE	1M	5%	1/16W	
R816	1-208-706-11	METAL CHIP	9.1K	0.50%	1/16W	
R817	1-218-983-11	METAL GLAZE	330K	5%	1/16W	
R818	1-218-983-11	METAL GLAZE	330K	5%	1/16W	
R819	1-218-983-11	METAL GLAZE	330K	5%	1/16W	
R820	1-218-983-11	METAL GLAZE	330K	5%	1/16W	
R821	1-218-989-11	METAL GLAZE	1M	5%	1/16W	
R822	1-218-989-11	METAL GLAZE	1M	5%	1/16W	
R823	1-218-732-11	METAL CHIP	47K	0.50%	1/16W	
R824	1-218-749-11	METAL CHIP	240K	0.50%	1/16W	
R825	1-218-983-11	METAL GLAZE	330K	5%	1/16W	
R826	1-218-973-11	METAL GLAZE	47K	5%	1/16W	
R827	1-208-699-11	METAL CHIP	4.7K	0.50%	1/16W	
R828	1-218-973-11	METAL GLAZE	47K	5%	1/16W	
R829	1-218-973-11	METAL GLAZE	47K	5%	1/16W	
R830	1-220-179-11	METAL GLAZE	510	5%	1/16W	
R831	1-208-699-11	METAL CHIP	4.7K	0.50%	1/16W	
R832	1-218-973-11	METAL GLAZE	47K	5%	1/16W	
R833	1-202-974-11	METAL GLAZE	3.3M	5%	1/16W	
R834	1-218-983-11	METAL GLAZE	330K	5%	1/16W	
R835	1-218-983-11	METAL GLAZE	330K	5%	1/16W	
R836	1-218-983-11	METAL GLAZE	330K	5%	1/16W	
R837	1-218-983-11	METAL GLAZE	330K	5%	1/16W	
R838	1-218-983-11	METAL GLAZE	330K	5%	1/16W	
R839	1-218-973-11	METAL GLAZE	47K	5%	1/16W	
R840	1-216-864-11	METAL CHIP	0	5%	1/16W	(E, JE)
R841	1-218-973-11	METAL GLAZE	47K	5%	1/16W	
R842	1-218-973-11	METAL GLAZE	47K	5%	1/16W	
R843	1-218-973-11	METAL GLAZE	47K	5%	1/16W	
R844	1-218-973-11	METAL GLAZE	47K	5%	1/16W	
R845	1-218-973-11	METAL GLAZE	47K	5%	1/16W	

MAIN MECHA CON

Ref. No.	Part No.	Description				Remark
R846	1-218-989-11	METAL GLAZE	1M	5%	1/16W	
R860	1-218-977-11	METAL GLAZE	100K	5%	1/16W	
R861	1-218-988-11	METAL GLAZE	820K	5%	1/16W	
R862	1-218-978-11	METAL GLAZE	120K	5%	1/16W	
R863	1-218-989-11	METAL GLAZE	1M	5%	1/16W	
R864	1-208-685-11	METAL CHIP	1.2K	0.50%	1/16W	
R865	1-218-965-11	METAL GLAZE	10K	5%	1/16W	
R866	1-218-977-11	METAL GLAZE	100K	5%	1/16W	
R867	1-218-988-11	METAL GLAZE	820K	5%	1/16W	
R868	1-218-977-11	METAL GLAZE	100K	5%	1/16W	
R870	1-218-977-11	METAL GLAZE	100K	5%	1/16W	
R871	1-218-983-11	METAL GLAZE	330K	5%	1/16W	
R872	1-218-965-11	METAL GLAZE	10K	5%	1/16W	
R873	1-218-977-11	METAL GLAZE	100K	5%	1/16W	
R874	1-218-985-11	METAL GLAZE	470K	5%	1/16W	
R875	1-218-985-11	METAL GLAZE	470K	5%	1/16W	
R876	1-202-974-11	METAL GLAZE	3.3M	5%	1/16W	
R877	1-202-974-11	METAL GLAZE	3.3M	5%	1/16W	
R878	1-202-974-11	METAL GLAZE	3.3M	5%	1/16W	
R880	1-202-974-11	METAL GLAZE	3.3M	5%	1/16W	
R881	1-202-974-11	METAL GLAZE	3.3M	5%	1/16W	
R882	1-218-990-11	METAL GLAZE	0	5%	1/16W	
R5001	1-208-685-11	METAL CHIP	1.2K	0.50%	1/16W	
R5010	1-208-683-11	METAL CHIP	1K	0.50%	1/16W	
R5011	1-208-683-11	METAL CHIP	1K	0.50%	1/16W	
R5012	1-208-683-11	METAL CHIP	1K	0.50%	1/16W	
R5014	1-208-683-11	METAL CHIP	1K	0.50%	1/16W	
R5015	1-208-719-11	METAL CHIP	33K	0.50%	1/16W	
R5016	1-208-719-11	METAL CHIP	33K	0.50%	1/16W	
R5017	1-218-975-11	METAL GLAZE	68K	5%	1/16W	
R5018	1-218-975-11	METAL GLAZE	68K	5%	1/16W	
R5020	1-216-860-11	METAL GLAZE	1.8M	5%	1/16W	
R5021	1-218-981-11	METAL GLAZE	220K	5%	1/16W	
R5027	1-218-965-11	METAL GLAZE	10K	5%	1/16W	
R5030	1-218-978-11	METAL GLAZE	120K	5%	1/16W	
R5032	1-218-975-11	METAL GLAZE	68K	5%	1/16W	
R5039	1-218-990-11	METAL GLAZE	0	5%	1/16W	
R5055	1-218-977-11	METAL GLAZE	100K	5%	1/16W	
R5056	1-218-990-11	METAL GLAZE	0	5%	1/16W	
R5067	1-218-980-11	METAL GLAZE	180K	5%	1/16W	
R5081	1-208-703-11	METAL CHIP	6.8K	0.50%	1/16W	
R5082	1-216-001-00	METAL CHIP	10	5%	1/10W	
R5092	1-218-944-11	METAL GLAZE	180	5%	1/16W	
R5095	1-220-398-11	METAL GLAZE	1.5M	5%	1/16W	
R5098	1-208-719-11	METAL CHIP	33K	0.50%	1/16W	
R5099	1-208-717-11	METAL CHIP	27K	0.50%	1/16W	
R5100	1-208-715-11	METAL CHIP	22K	0.50%	1/16W	
R5102	1-218-989-11	METAL GLAZE	1M	5%	1/16W	
R5103	1-208-699-11	METAL CHIP	4.7K	0.50%	1/16W	
R5105	1-218-965-11	METAL GLAZE	10K	5%	1/16W	
R5107	1-208-721-11	METAL CHIP	39K	0.50%	1/16W	
R5108	1-208-721-11	METAL CHIP	39K	0.50%	1/16W	
R5109	1-218-965-11	METAL GLAZE	10K	5%	1/16W	
R5116	1-216-796-11	METAL GLAZE	8.2	5%	1/16W	
R5117	1-218-965-11	METAL GLAZE	10K	5%	1/16W	
R5200	1-216-864-11	METAL CHIP	0	5%	1/16W	
R5202	1-218-990-11	METAL GLAZE	0	5%	1/16W	
R5206	1-216-013-00	METAL CHIP	33	5%	1/10W	
R5207	1-216-013-00	METAL CHIP	33	5%	1/10W	

< SWITCH >

S801	1-572-467-31	SWITCH, PUSH (1 KEY)(REC →)	
S802	1-571-275-31	SWITCH, SLIDE (HOLD →)	
S803	1-692-088-11	SWITCH, TACTILE (BASS BOOST)	
S804	1-572-473-11	SWITCH, TACTIL (CLOCK SET)	
S805	1-572-473-11	SWITCH, TACTIL (RESET)	

< VIBRATOR >

X602	1-760-173-11	VIBRATOR, CRYSTAL (45MHz)	
X801	1-760-172-11	VIBRATOR, CERAMIC (4.19MHz)	
X802	1-579-886-21	VIBRATOR, CRYSTAL (32.768kHz)	
X803	1-760-174-11	VIBRATOR, CERAMIC (12MHz)	

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A-3276-233-A MECHA CON BOARD, COMPLETE
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1-651-017-11 CLV FLEXIBLE BOARD

< CAPACITOR >

C701	1-164-227-11	CERAMIC CHIP	0.022uF	10%	25V	
C702	1-165-176-11	CERAMIC CHIP	0.047uF	10%	16V	
C703	1-164-227-11	CERAMIC CHIP	0.022uF	10%	25V	
C704	1-164-005-11	CERAMIC CHIP	0.47uF		25V	
C705	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V	
C706	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V	
C707	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V	
C708	1-162-967-11	CERAMIC CHIP	0.0033uF	10%	50V	
C709	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V	
C710	1-164-005-11	CERAMIC CHIP	0.47uF		25V	
C711	1-164-156-11	CERAMIC CHIP	0.1uF		25V	
C712	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V	
C713	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V	
C714	1-107-813-11	TANTAL. CHIP	10uF	20%	6.3V	
C715	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V	
C716	1-107-813-11	TANTAL. CHIP	10uF	20%	6.3V	

< CONNECTOR >

* CN701	1-573-925-11	CONNECTOR, FFC/FPC (ZIF) 16P	
CN702	1-573-915-11	CONNECTOR, FFC/FPC (ZIF) 6P	

< IC >

Ref. No.	Part No.	Description	Remark
IC701	8-759-098-52	IC CXA-8027N	
IC702	8-759-252-32	IC MPC1730VMEL	

< TRANSISTOR >

Ref. No.	Part No.	Description	Remark
Q701	8-729-905-12	TRANSISTOR DTA144EU	
Q702	8-729-904-07	TRANSISTOR FMG2	

< RESISTOR >

Ref. No.	Part No.	Description	Remark
R701	1-218-716-11	METAL CHIP 10K 0.50% 1/16W	
R702	1-218-716-11	METAL CHIP 10K 0.50% 1/16W	
R703	1-216-815-11	METAL CHIP 330 5% 1/16W	
R704	1-217-671-11	METAL CHIP 1 5% 1/10W	
R705	1-217-671-11	METAL CHIP 1 5% 1/10W	
R706	1-216-827-11	METAL CHIP 3.3K 5% 1/16W	
R708	1-216-845-11	METAL CHIP 100K 5% 1/16W	
R709	1-216-845-11	METAL CHIP 100K 5% 1/16W	

< SWITCH >

Ref. No.	Part No.	Description	Remark
S701	1-692-849-21	SWITCH, PUSH (1 KEY)(MEDIA)	
S702	1-692-847-21	SWITCH, PUSH (1 KEY)(PROTECT)	
S703	1-692-377-31	SWITCH, PUSH (1 KEY)(REFLECT)	
S704	1-572-467-31	SWITCH, PUSH (1 KEY)(INITIAL)	
S705	1-572-467-31	SWITCH, PUSH (1 KEY)(INLIMMIT)	

****

Ref. No.	Part No.	Description	Remark
*	1-651-019-11	REC BOARD	

****

< CAPACITOR >

Ref. No.	Part No.	Description	Remark
C901	1-164-360-11	CERAMIC CHIP 0.1uF 16V	
C902	1-107-810-11	TANTAL. CHIP 33uF 20% 4V	
C903	1-109-814-11	CAP, CHIP MICA 220PF 100V	
C904	1-165-112-11	CERAMIC CHIP 0.33uF 16V	

< CONNECTOR >

Ref. No.	Part No.	Description	Remark
CN901	1-573-915-11	CONNECTOR, FFC/FPC (ZIF) 6P	
CN902	1-573-915-11	CONNECTOR, FFC/FPC (ZIF) 6P	

< DIODE >

Ref. No.	Part No.	Description	Remark
D901	8-719-046-86	DIODE F1J6TP	
D902	8-719-046-86	DIODE F1J6TP	

< IC >

Ref. No.	Part No.	Description	Remark
IC901	8-759-252-34	IC MC74ACT540DTEL	

< TRANSISTOR >

Ref. No.	Part No.	Description	Remark
Q901	8-729-024-44	TRANSISTOR 2SK2315TYTR	
Q902	8-729-024-44	TRANSISTOR 2SK2315TYTR	
Q903	8-729-024-44	TRANSISTOR 2SK2315TYTR	
Q904	8-729-024-44	TRANSISTOR 2SK2315TYTR	

< RESISTOR >

Ref. No.	Part No.	Description	Remark
R901	1-216-853-11	METAL CHIP 470K 5% 1/16W	
R902	1-216-853-11	METAL CHIP 470K 5% 1/16W	
R903	1-216-853-11	METAL CHIP 470K 5% 1/16W	
R904	1-216-853-11	METAL CHIP 470K 5% 1/16W	
R905	1-216-839-11	METAL CHIP 33K 5% 1/16W	

****

MISCELLANEOUS

****

Ref. No.	Part No.	Description	Remark
6	1-810-410-11	LCD MODULE	
57	1-467-509-11	DD CONVERTER UNIT	
709	1-651-016-11	REC FLEXIBLE BOARD	
⚠710	A-3300-221-A	OPTICAL PICK-UP BLOCK	
711	1-651-018-11	SLED FLEXIBLE BOARD	
754	1-651-017-11	CLV FLEXIBLE BOARD	
761	1-651-015-11	MD FLEXIBLE BOARD	
M901	1-698-313-11	MOTOR	
M902	A-3300-219-A	MOTOR BLOCK ASSY, SLED	
M903	A-3300-216-A	STEPPER BLOCK ASSY	

****

ACCESSORIES & PACKING MATERIALS

****

Ref. No.	Part No.	Description	Remark
	1-467-505-11	REMOCON UNIT (RM-MZR2-MP)	
⚠	1-467-510-11	ADAPTOR, AC (AC-MZ60)(US, CND)	
⚠	1-467-511-11	ADAPTOR, AC (AC-MZ60)(AEP)	
⚠	1-467-512-11	ADAPTOR, AC (AC-MZ60)(UK)	
⚠	1-467-513-11	ADAPTOR, AC (AC-MZ60)(AUS)	
⚠	1-467-514-31	ADAPTOR, AC (AC-MZ60)(E, JE)	
	1-528-501-11	BATTERY CASE	
	1-528-502-13	BATTERY, LITHIUM ION (LIP-12(H))	
	1-559-906-32	CORD, CONNECTION	
⚠	1-569-007-11	ADAPTER, CONVERSION 2P (E, JE)	
	3-758-089-11	MANUAL, INSTRUCTION (ENGLISH, FRENCH, GERMAN, SPANISH)(CND, AEP, E, JE)	
	3-758-089-21	MANUAL, INSTRUCTION (ENGLISH)(US, UK, AUS)	
	3-758-089-41	MANUAL, INSTRUCTION (DUTCH, SWEDISH, ITALIAN, PORTUGUESE)(AEP)	
	3-758-089-51	MANUAL, INSTRUCTION (JAPANESE, KOREAN) (JE)	
	4-963-933-01	CASE, CARRYING	
*	4-964-419-01	CASE, INDIVIDUAL (JE)	
*	4-964-420-01	CASE, ACCESSORY	
*	4-964-926-01	CUSHION, MAIN	
*	4-966-814-01	INDIVIDUAL CARTON (U)	
*	4-966-819-01	INDIVIDUAL CARTON (CND, AEP, UK, E, AUS)	
	8-953-009-90	HEADPHONE MDR-014MP SET (US)	
	8-953-537-94	HEADPHONE MDR-E741MP/K2 SET (CND, AEP, UK, E, AUS, JE)	

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

Les composants identifiés par une marque ⚠ sont critiques pour la sécurité.
Ne les remplacer que par une piéce portant le numéro spécifié.

MZ-R2

SONY

SERVICE MANUAL

1994.05

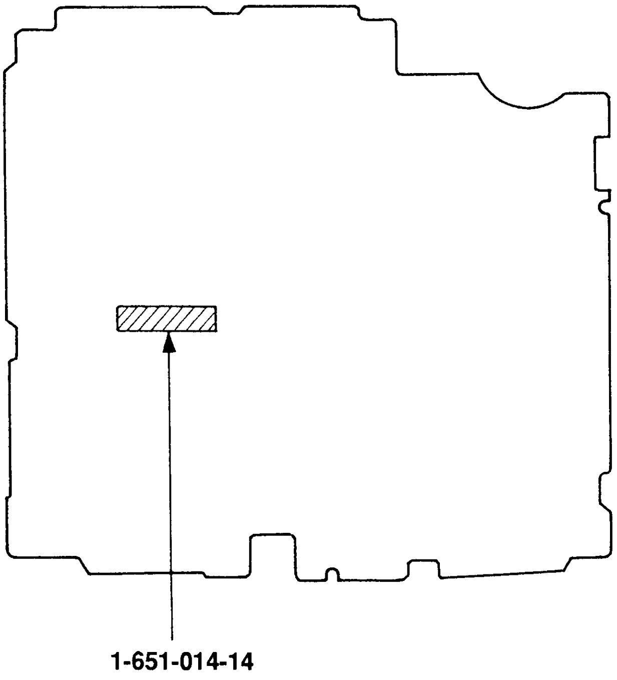
US Model
Canadian Model
AEP Model
UK Model
E Model
Australian Model
Tourist Model

SUPPLEMENT-1

File this Supplement with the Service Manual.

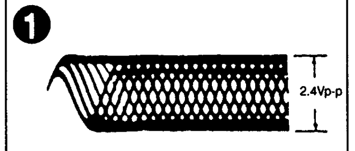
Subjict : Main board change

New type identification :
[MAIN BOARD] (SIDE A)

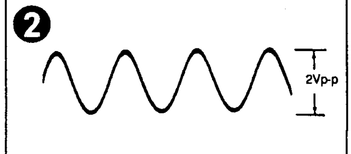


SCHEMATIC DIAGRAM — RF/SERVO SECTION —
- Refer to page 19 for Printed Wiring Boards.
- Refer to pages 65 to 70 of Service Manual for IC Block Diagrams.

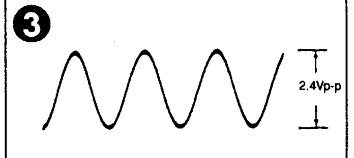
- **Waveforms.**



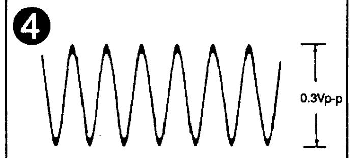
IC501 ㊸ PLAY



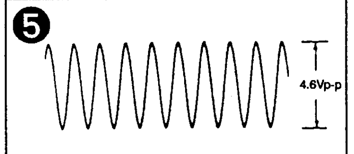
IC601 (51) (22.579MHz)



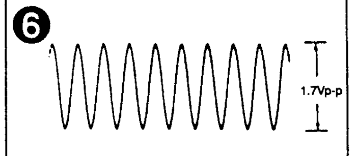
IC603 ㉞ (22.579MHz)



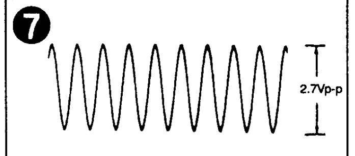
IC603 ㊾ (45MHz)



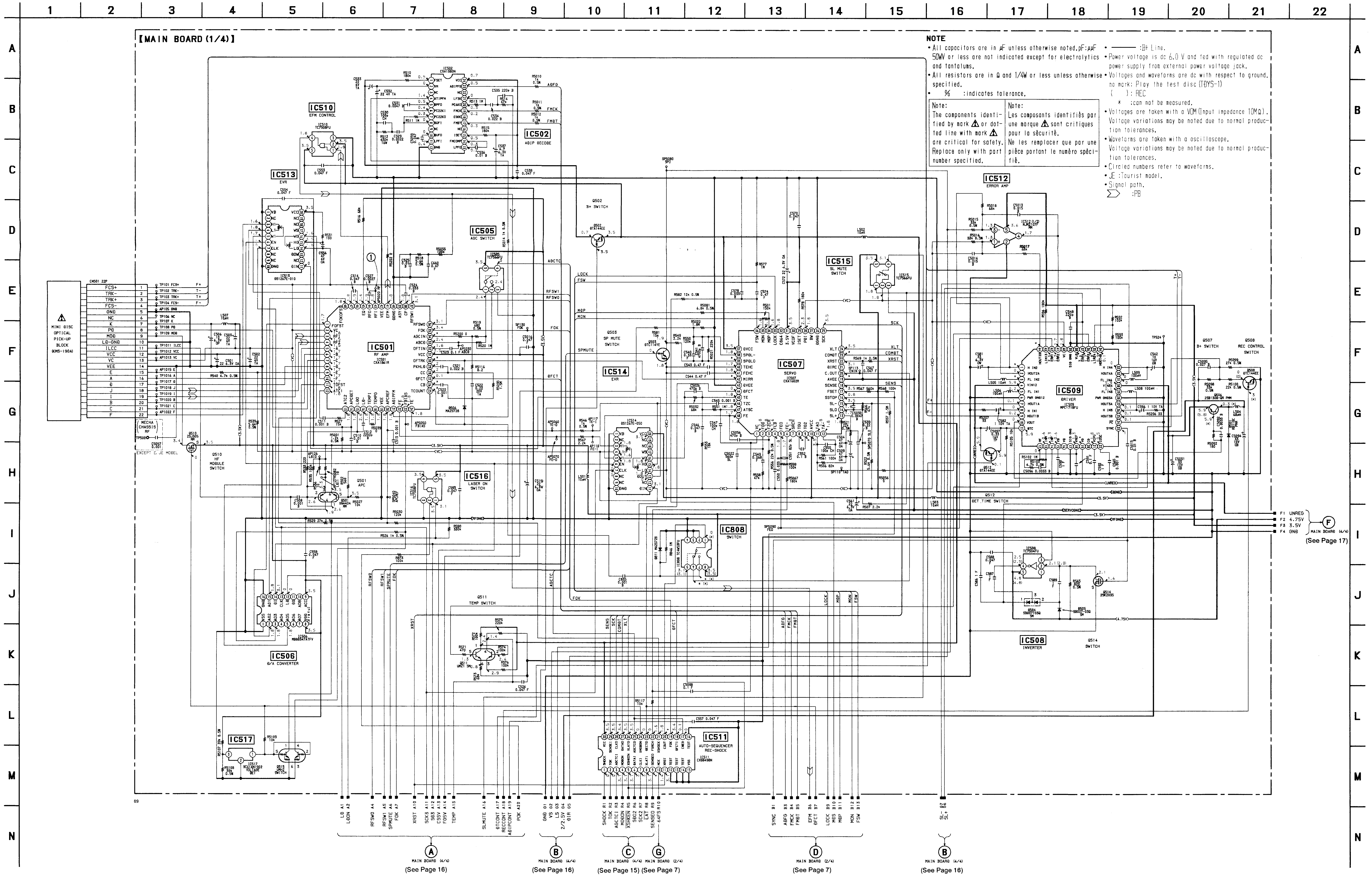
IC803 ⑤ (4.19MHz)



IC803 ⑧ (32.768kHz)



IC805 ㊵ (12MHz)


【MAIN BOARD (1/4)】
IC501 RF AMP
IC502 ADIP DECODE
IC505 ADC SWITCH
IC506 D/A CONVERTER
IC507 SERVO
IC508 INVERTER
IC509 DRIVER
IC510 EFM CONTROL
IC511 AUTO-SEQUENCER REC-SHOCK
IC512 ERROR AMP
IC513 EVR
IC514 EVR
IC515 SL MUTE SWITCH
IC516 LASER ON SWITCH
IC517
IC808 SWITCH
CN501 MINI DISC OPTICAL PICK-UP BLOCK
Q502 B+ SWITCH
Q503 SP MUTE SWITCH
Q507 B+ SWITCH
Q508 REC CONTROL SWITCH
Q510 HF MODULE SWITCH
Q501 APC
Q511 TEMP SWITCH
Q513 SET TIME SWITCH
Q514 SWITCH
F1 UNREG
F2 4.75V
F3 3.5V
F4 GND
MAIN BOARD (4/4) (See Page 17)
MAIN BOARD (4/4) (See Page 16)
MAIN BOARD (4/4) (See Page 16)
MAIN BOARD (4/4) (See Page 15)
MAIN BOARD (2/4) (See Page 7)
MAIN BOARD (2/4) (See Page 7)
MAIN BOARD (4/4) (See Page 16)

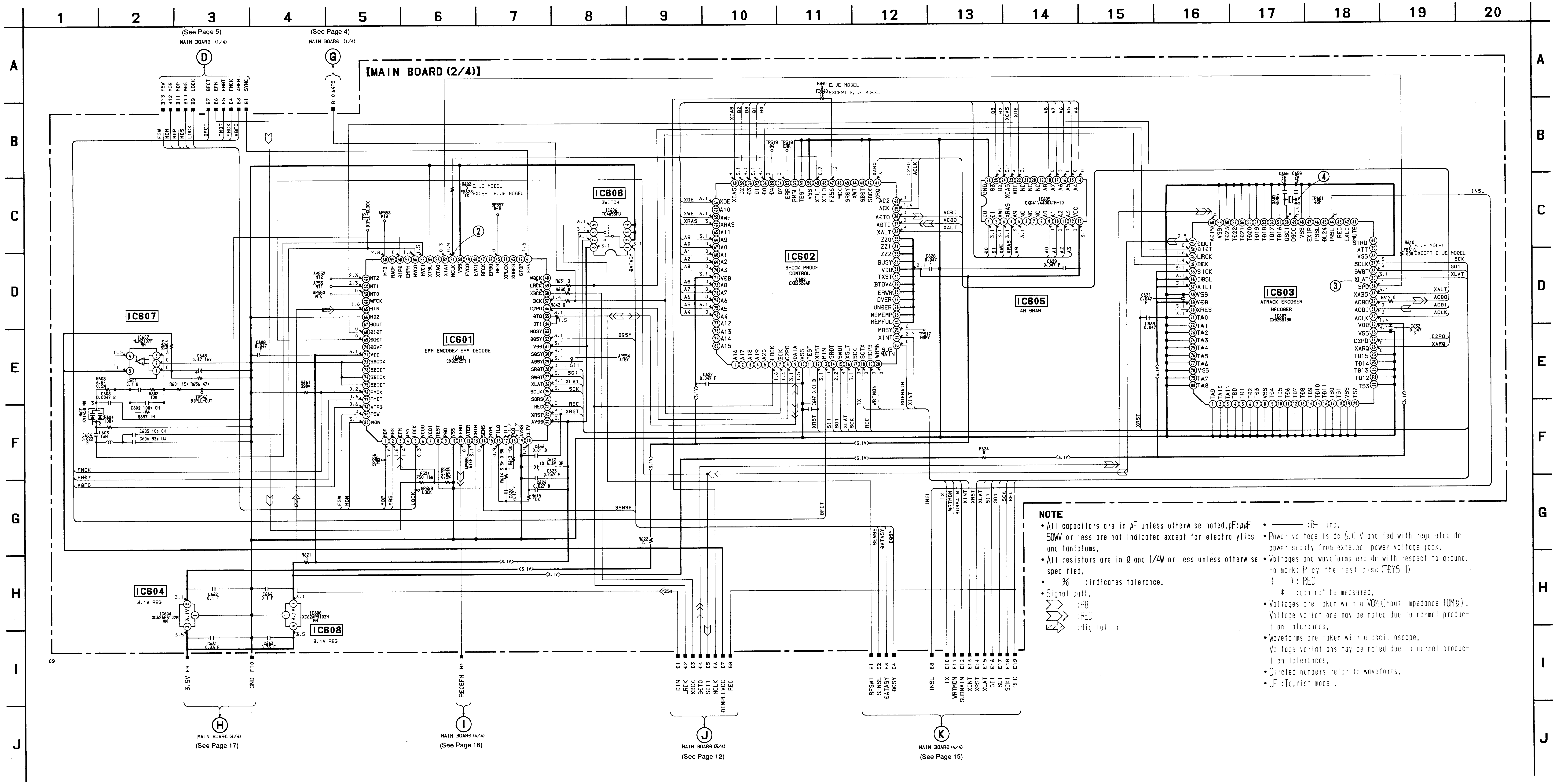
NOTE
- All capacitors are in µF unless otherwise noted. pF: µµF 50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and 1/4W or less unless otherwise specified.
- % :indicates tolerance.

Note:	Note:
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiès par une marque ⚠ sont critiques pour la sècuritè. Ne les remplacer que par une piѐce portant le numѐro spècifiè.

- ——— :B+ Line.
- Power voltage is dc 6.0 V and fed with regulated dc power supply from external power voltage jack.
- Voltages and waveforms are dc with respect to ground.
  no mark: Play the test disc (TDYS-1)
  ( ) : REC
  * :can not be measured.
- Voltages are taken with a VOM (Input impedance 10MΩ). Voltage variations may be noted due to normal production tolerances.
- Waveforms are taken with a oscilloscope. Voltage variations may be noted due to normal production tolerances.
- Circled numbers refer to waveforms.
- JE :Tourist model.
- Signal path.
  ⟫ :PB

SCHEMATIC DIAGRAM — PROCESS SECTION —

- Refer to page 19 for Printed Wiring Boards.
- See page 3 for Waveforms.
- Refer to pages 34 to 41 of Service Manual for IC Pin Functions.
- Refer to pages 65 to 70 of Service Manual for IC Block Diagrams.

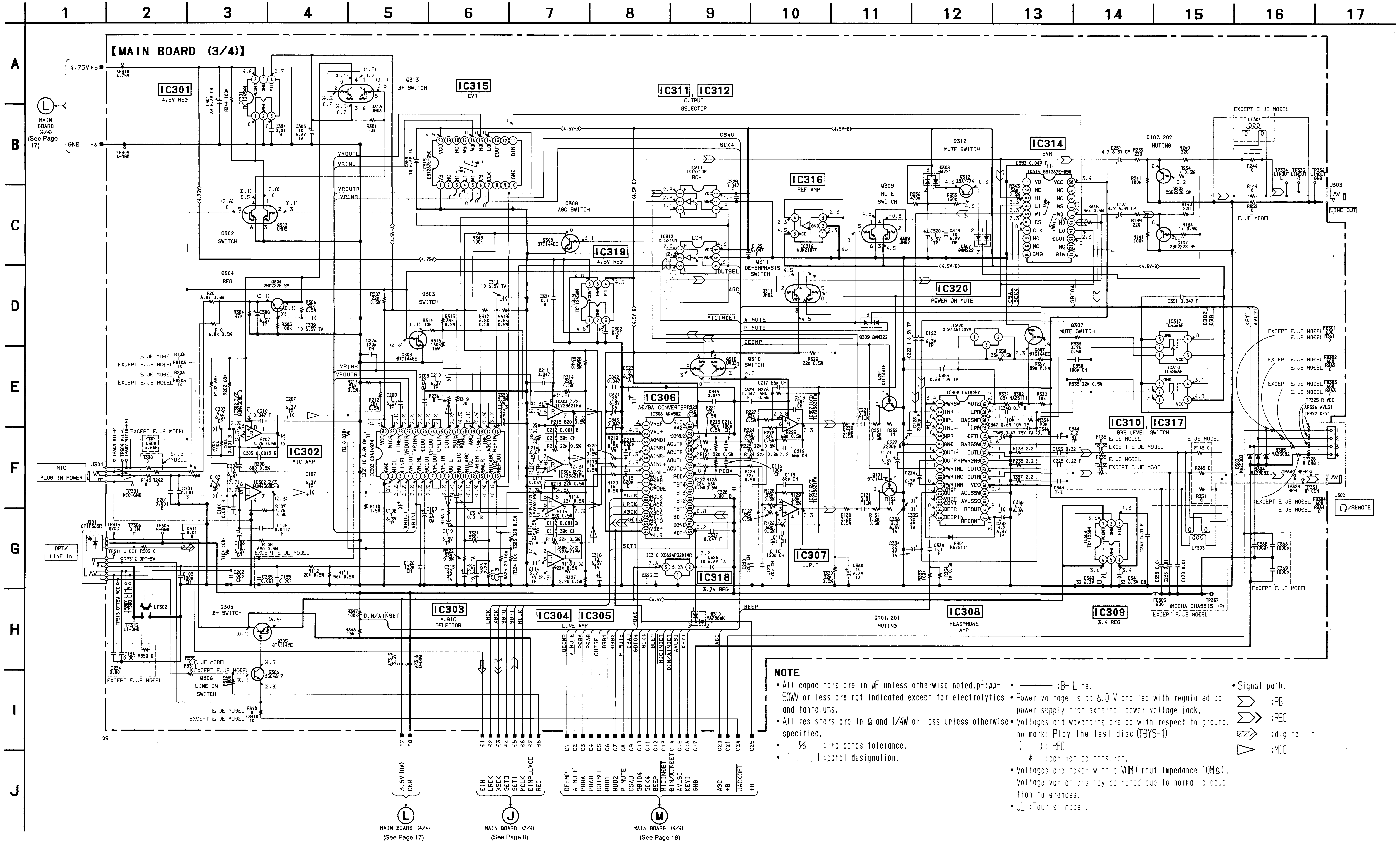

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20
A B C D E F G H I J
(See Page 5)
MAIN BOARD (1/4)
D
B13 FSW
B12 MON
B11 MDP
B10 MDS
B9 LOCK
B7 DFCT
B6 EFM
B5 FMDT
B4 FMCK
B3 ADFG
B1 SYNC
(See Page 4)
MAIN BOARD (1/4)
G
R10 64FS
[MAIN BOARD (2/4)]
IC601
EFM ENCODE/EFM DECODE
IC601 CXD2525AR-1
IC602
SHOCK PROOF CONTROL
IC602 CXD2526AR
IC603
ATRACK ENCODER DECODER
IC603 CXD2531BR
IC605
4M DRAM
IC606
SWITCH
IC607
IC604
3.1V REG
IC604 XC62AP3102M MM
IC608
3.1V REG
IC608 XC62AP3102M MM
3.5V F9
GND F10
H
MAIN BOARD (4/4)
(See Page 17)
RECEFM H1
I
MAIN BOARD (4/4)
(See Page 16)
D1 DIN
D2 LRCK
D3 XBCK
D4 SDTO
D5 SDT1
D6 MCLK
D7 DINPLLVCC
D8 REC
J
MAIN BOARD (3/4)
(See Page 12)
E1 RFSW1
E2 SENSE
E3 DATASY
E4 DQSY
E8 INSL
E10 TX
E11 WRTMON
E12 SUBMAIN
E13 XINT
E14 XRST
E15 XLAT
E16 SI1
E17 SO1
E18 SCK1
E19 REC
K
MAIN BOARD (4/4)
(See Page 15)

NOTE

- All capacitors are in μF unless otherwise noted. pF: μμF 50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and 1/4W or less unless otherwise specified.
- % : indicates tolerance.
- Signal path.
  - ⟩ :PB
  - ⟩⟩ :REC
  - ⇨ :digital in
- ——— :B+ Line.
- Power voltage is dc 6.0 V and fed with regulated dc power supply from external power voltage jack.
- Voltages and waveforms are dc with respect to ground.
  no mark: Play the test disc (TDYS-1)
  ( ) : REC
  * :can not be measured.
- Voltages are taken with a VOM (Input impedance 10MΩ). Voltage variations may be noted due to normal production tolerances.
- Waveforms are taken with a oscilloscope. Voltage variations may be noted due to normal production tolerances.
- Circled numbers refer to waveforms.
- JE :Tourist model.

SCHEMATIC DIAGRAM — AUDIO SECTION —

- Refer to page 19 for Printed Wiring Boards.
- Refer to pages 65 to 70 of Service Manual for IC Block Diagrams.



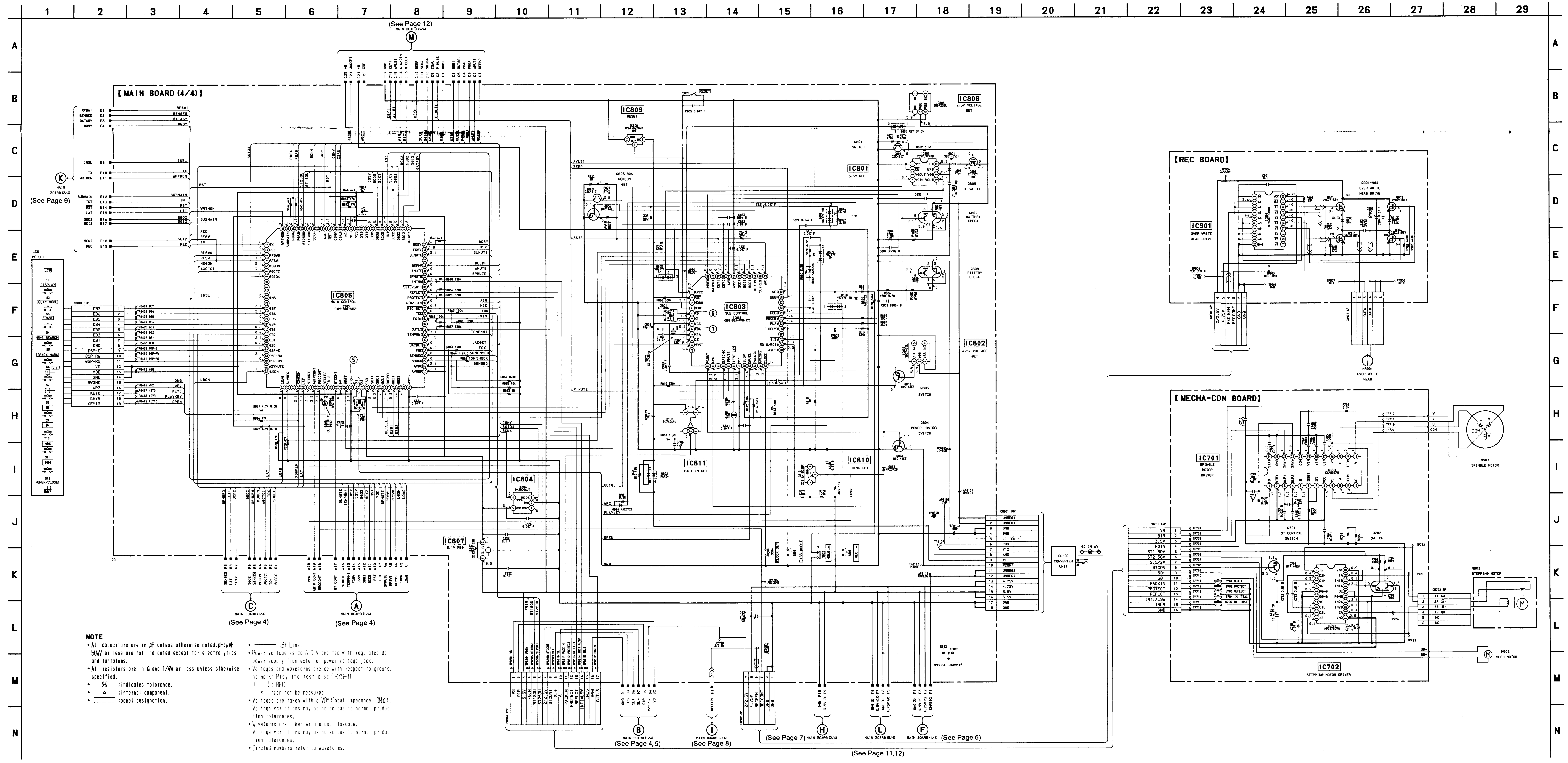
[MAIN BOARD (3/4)]
IC301 4.5V REG
IC315 EVR
IC311, IC312 OUTPUT SELECTOR
IC314 EVR
IC316 REF AMP
IC319 4.5V REG
IC320 POWER ON MUTE
IC306 AD/DA CONVERTER
IC302 MIC AMP
IC307 L.P.F
IC318 3.2V REG
IC310, IC317 6BB LEVEL SWITCH
IC303 AUDIO SELECTOR
IC304, IC305 LINE AMP
IC308 HEADPHONE AMP
IC309 3.4 REG
Q313 B+ SWITCH
Q302 SWITCH
Q304 REG
Q303 SWITCH
Q308 AGC SWITCH
Q311 DE-EMPHASIS SWITCH
Q310 SWITCH
Q312 MUTE SWITCH
Q309 MUTE SWITCH
Q307 MUTE SWITCH
Q102, 202 MUTING
Q101, 201 MUTING
Q305 B+ SWITCH
Q306 LINE IN SWITCH
MAIN BOARD (4/4) (See Page 17)
MIC PLUG IN POWER
OPT/ LINE IN
LINE OUT
J303
J302
/REMOTE
EXCEPT E, JE MODEL
E, JE MODEL
3.5V (DA) GND
MAIN BOARD (4/4) (See Page 17)
MAIN BOARD (2/4) (See Page 8)
MAIN BOARD (4/4) (See Page 16)

NOTE

- All capacitors are in μF unless otherwise noted. pF: μμF 50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and 1/4W or less unless otherwise specified.
- % :indicates tolerance.
- ▭ :panel designation.
- ——— :B+ Line.
- Power voltage is dc 6.0 V and fed with regulated dc power supply from external power voltage jack.
- Voltages and waveforms are dc with respect to ground.
  no mark: Play the test disc (TDYS-1)
  (   ): REC
  * :can not be measured.
- Voltages are taken with a VOM (Input impedance 10MΩ). Voltage variations may be noted due to normal production tolerances.
- JE :Tourist model.

- Signal path.
  - ⊳ :PB
  - ⊳⊳ :REC
  - ⇨ :digital in
  - ▷ :MIC

SCHEMATIC DIAGRAM — MICRO COMPUTER SECTION —
- Refer to page 19 for Printed Wiring Boards.
- See page 3 for Waveforms.
- Refer to pages 34 to 41 of Service Manual for IC Pin Functions.
- Refer to pages 65 to 70 of Service Manual for IC Block Diagrams.



1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29
A B C D E F G H I J K L M N
(See Page 12)
M
MAIN BOARD (3/4)
[MAIN BOARD (4/4)]
K
MAIN BOARD (2/4)
(See Page 9)
LCD MODULE
IC805
MAIN CONTROL
IC809
RESET
IC806
2.5V VOLTAGE DET
IC801
3.5V REG
IC803
SUB CONTROL
IC802
4.5V VOLTAGE DET
IC811
PACK IN DET
IC810
6/3C DET
IC804
IC807
3.1V REG
Q801 SWITCH
Q802 BATTERY CHECK
Q803 BATTERY CHECK
Q805 SWITCH
Q804 POWER CONTROL SWITCH
Q809 B+ SWITCH
DC-DC CONVERTER UNIT
DC IN 6V
[REC BOARD]
IC901
OVER WRITE HEAD DRIVE
Q901-904 OVER WRITE HEAD DRIVE
HR901 OVER WRITE HEAD
[MECHA-CON BOARD]
IC701
SPINDLE MOTOR DRIVER
IC702
STEPPING MOTOR DRIVER
Q701 ST CONTROL SWITCH
Q702 SWITCH
M901 SPINDLE MOTOR
M903 STEPPING MOTOR
M902 SLED MOTOR
C
MAIN BOARD (1/4)
(See Page 4)
A
MAIN BOARD (1/4)
(See Page 4)
B
MAIN BOARD (1/4)
(See Page 4,5)
I
MAIN BOARD (2/4)
(See Page 8)
(See Page 7)
H
MAIN BOARD (2/4)
L
MAIN BOARD (3/4)
F
MAIN BOARD (1/4)
(See Page 6)
(See Page 11,12)
MECHA CHASSIS

NOTE
- All capacitors are in μF unless otherwise noted. pF: μμF 50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and 1/4W or less unless otherwise specified.
- % :indicates tolerance.
- △ :internal component.
- ☐ :panel designation.

- ——— :B+ Line.
- Power voltage is dc 6.0 V and fed with regulated dc power supply from external power voltage jack.
- Voltages and waveforms are dc with respect to ground.
  no mark: Play the test disc (TDYS-1)
  ( ) : REC
  * :can not be measured.
- Voltages are taken with a VOM (Input impedance 10MΩ). Voltage variations may be noted due to normal production tolerances.
- Waveforms are taken with a oscilloscope. Voltage variations may be noted due to normal production tolerances.
- Circled numbers refer to waveforms.

PRINTED WIRING BOARDS

- Refer to pages 32, 33 of Service Manuai for Semiconductor Lead Layouts.

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30
A B C D E F G H I J
LCD MODULE
LCD
DISPLAY
PLAY MODE
ERASE
END SERCH
TRACK MARK
VOL
OPEN/CLOSE
[MAIN BOARD] (SIDE A)
CLOCK SET
DC-DC CONVERTER UNIT
DC IN 6V
[MAIN BOARD] (SIDE B)
[MECHA-CON BOARD] (SIDE A)
M903 LOADING MOTOR
[CLV FLEXIBLE BOARD]
M901 SPINDLE MOTOR
M902 SLED MOTOR
[MECHA-CON BOARD] (SIDE B)
(PROTECT)
IC805
IC803
IC811
IC511
IC514
IC502
IC506
IC303
IC602
IC603
IC507
IC508
IC601
BASS BOOST
EXCEPT E,JE MODEL
J303 LINE OUT
J301 MIC PLUG IN POWER
J201 OPT/ LINE IN
J302 REMOTE
HOLD
[REC BOARD]
MINI DISC OPTICAL PICK-UP BLOCK (KMS-190A)
EXCEPT E,JE MODEL FB301 FB302 FB303 FB304
E,JE MODEL R321 R322 R323 R324
1-651-017-
1-651-019-
1-651-016-
1-651-014-

- **Semiconductor Location**

Ref. No.	Location	Ref. No.	Location
D301	I-15	IC601	F-23
D302	J-16	IC602	D-22
D303	H-18	IC603	C-25
D304	I-18	IC604	B-17
D305	I-18	IC605	D-17
D307	D-18	IC606	E-22
D308	C-18	IC607	E-25
D309	D-18	IC608	D-24
D310	H-14	IC701	F-3
D501	C-12	IC702	E-3
D504	B-27	IC801	A-25
D505	B-27	IC802	A-26
D506	G-28	IC803	C-14
D601	E-24	IC804	E-27
D801	B-23	IC805	D-11
D802	B-15	IC806	A-25
D803	E-14	IC807	D-27
D804	B-13	IC808	H-28
D805	B-26	IC809	B-26
D806	C-13	IC810	E-26
D808	J-24	IC811	C-16
D809	B-15	IC901	I-3
D810	C-26		
D811	I-28	Q101	I-26
D812	B-16	Q102	E-18
D813	E-14	Q201	G-25
D814	B-11	Q202	E-18
D901	I-3	Q302	H-23
D902	I-3	Q303	H-24
		Q304	G-23
IC301	H-22	Q305	F-18
IC302	G-17	Q306	E-21
IC303	G-16	Q307	H-23
IC304	H-15	Q308	H-23
IC305	F-15	Q309	D-18
IC306	F-14	Q310	F-25
IC307	F-25	Q311	F-25
IC308	I-15	Q312	C-18
IC309	H-25	Q313	H-23
IC310	H-13	Q501	G-29
IC311	H-25	Q502	G-12
IC312	I-25	Q503	F-28
IC314	I-25	Q506	C-11
IC315	H-14	Q508	A-28
IC316	H-26	Q510	I-29
IC317	I-14	Q511	A-27
IC318	F-26	Q512	B-29
IC319	E-16	Q514	B-26
IC320	I-14	Q515	I-9
IC501	G-28	Q701	E-7
IC502	H-12	Q702	E-4
IC505	H-27	Q801	B-25
IC506	I-11	Q802	D-13
IC507	E-28	Q803	B-26
IC508	A-27	Q804	D-15
IC509	C-28	Q805	C-13
IC510	F-27	Q806	B-26
IC511	F-12	Q808	D-26
IC512	B-30	Q809	B-16
IC513	H-11	Q901	J-2
IC514	G-11	Q902	J-3
IC515	D-29	Q903	J-4
IC516	H-28	Q904	H-4
IC517	I-10		

Note:

- o—— : parts extracted from the component side.
- ○ : Through hole.
- △ : internal component.
- ▓ : Pattern from the side which enable seeing.
- ░ : Pattern of the rear side.

SECTION 8
ELECTRICAL PARTS LIST

NOTE:

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

Les composants identifiés par une marque ⚠ sont critiques pour la sécurité.
Ne les remplacer que par une piéce portant le numéro spécifié.

When indicating parts by reference number, please include the board name.

- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- -XX, -X mean standardized parts, so they may have some difference from the original one.
- Color Indication of Appearance Parts Example:
  KNOB, BALANCE (WHITE) . . . (RED)
  ↑ Parts color ↑ Cabinet's color
- JE : Tourist model

- RESISTORS
  All resistors are in ohms
  METAL: Metal-film resistor
  METAL OXIDE: Metal Oxide-film resistor
  F : nonflammable
- SEMICONDUCTORS
  In each case, u: μ , for example:
  uA...: μA..., uPA...: μPA...,
  uPB...: μPB..., uPC...: μPC...,
  uPD...: μPD...
- CAPACITORS
  uF : μF
- COILS
  uH : μH

Ref. No.	Part No.	Description	Remark
	A-3264-999-A	MAIN BOARD, COMPLETE (EXCEPT E, JE) ********************************	
	A-3276-264-A	MAIN BOARD, COMPLETE (E, JE) **************************	
*	3-556-804-01	SHEET (F), ADHESIVE	
	3-831-441-XX	SPACER, KNOB	

< CAPACITOR >

Ref. No.	Part No.	Description			Remark
C101	1-164-937-11	CERAMIC CHIP	0.001uF	10%	16V
C102	1-164-874-11	CERAMIC CHIP	100PF	5%	16V
C103	1-107-812-11	TANTAL. CHIP	4.7uF	20%	6.3V
C104	1-164-937-11	CERAMIC CHIP	0.001uF	10%	16V
C105	1-164-730-11	CERAMIC CHIP	0.0012uF	10%	50V
C106	1-107-813-11	TANTAL. CHIP	10uF	20%	6.3V
C107	1-135-337-11	TANTAL. CHIP	1uF	20%	6.3V
C108	1-135-337-11	TANTAL. CHIP	1uF	20%	6.3V
C109	1-107-811-11	TANTAL. CHIP	47uF	20%	4V
C110	1-135-337-11	TANTAL. CHIP	1uF	20%	6.3V
C111	1-164-949-11	CERAMIC CHIP	0.047uF		16V
C112	1-164-937-11	CERAMIC CHIP	0.001uF	10%	16V
C113	1-164-864-11	CERAMIC CHIP	39PF	5%	16V
C114	1-107-815-11	TANTAL. CHIP	2.2uF	20%	4V
C115	1-164-473-11	CERAMIC CHIP	820PF	10%	50V
C116	1-164-874-11	CERAMIC CHIP	100PF	5%	16V
C117	1-164-868-11	CERAMIC CHIP	56PF	5%	16V
C118	1-164-876-11	CERAMIC CHIP	120PF	5%	16V
C119	1-164-870-11	CERAMIC CHIP	68PF	5%	16V
C120	1-164-876-11	CERAMIC CHIP	120PF	5%	16V
C121	1-104-551-11	FILM CHIP	0.01uF	5%	16V
C122	1-135-337-11	TANTAL. CHIP	1uF	20%	6.3V
C123	1-164-939-11	CERAMIC CHIP	0.0022uF	10%	16V
C124	1-135-337-11	TANTAL. CHIP	1uF	20%	6.3V
C125	1-165-128-11	CERAMIC CHIP	0.22uF		16V
C126	1-164-876-11	CERAMIC CHIP	120PF	5%	16V
C129	1-164-949-11	CERAMIC CHIP	0.047uF		16V
C131	1-107-812-11	TANTAL. CHIP	4.7uF	20%	6.3V
C133	1-164-937-11	CERAMIC CHIP	0.001uF	10%	16V (EXCEPT E, JE)
C134	1-164-937-11	CERAMIC CHIP	0.001uF	10%	16V (EXCEPT E, JE)
C135	1-164-937-11	CERAMIC CHIP	0.001uF	10%	16V (EXCEPT E, JE)
C201	1-164-937-11	CERAMIC CHIP	0.001uF	10%	16V
C202	1-164-874-11	CERAMIC CHIP	100PF	5%	16V
C203	1-107-812-11	TANTAL. CHIP	4.7uF	20%	6.3V
C204	1-164-937-11	CERAMIC CHIP	0.001uF	10%	16V
C205	1-164-730-11	CERAMIC CHIP	0.0012uF	10%	50V
C206	1-107-813-11	TANTAL. CHIP	10uF	20%	6.3V
C207	1-135-337-11	TANTAL. CHIP	1uF	20%	6.3V
C208	1-135-337-11	TANTAL. CHIP	1uF	20%	6.3V
C209	1-107-811-11	TANTAL. CHIP	47uF	20%	4V
C210	1-135-337-11	TANTAL. CHIP	1uF	20%	6.3V
C211	1-164-949-11	CERAMIC CHIP	0.047uF		16V
C212	1-164-937-11	CERAMIC CHIP	0.001uF	10%	16V
C213	1-164-864-11	CERAMIC CHIP	39PF	5%	16V
C214	1-107-815-11	TANTAL. CHIP	2.2uF	20%	4V
C215	1-164-473-11	CERAMIC CHIP	820PF	10%	50V
C216	1-164-874-11	CERAMIC CHIP	100PF	5%	16V
C217	1-164-868-11	CERAMIC CHIP	56PF	5%	16V
C218	1-164-876-11	CERAMIC CHIP	120PF	5%	16V
C219	1-164-870-11	CERAMIC CHIP	68PF	5%	16V
C220	1-164-876-11	CERAMIC CHIP	120PF	5%	16V
C221	1-104-551-11	FILM CHIP	0.01uF	5%	16V
C222	1-135-337-11	TANTAL. CHIP	1uF	20%	6.3V
C223	1-164-939-11	CERAMIC CHIP	0.0022uF	10%	16V
C224	1-135-337-11	TANTAL. CHIP	1uF	20%	6.3V
C225	1-165-128-11	CERAMIC CHIP	0.22uF		16V
C226	1-164-876-11	CERAMIC CHIP	120PF	5%	16V
C229	1-164-949-11	CERAMIC CHIP	0.047uF		16V
C231	1-107-812-11	TANTAL. CHIP	4.7uF	20%	6.3V
C233	1-164-937-11	CERAMIC CHIP	0.001uF	10%	16V (EXCEPT E, JE)
C234	1-164-937-11	CERAMIC CHIP	0.001uF	10%	16V (EXCEPT E, JE)
C235	1-164-937-11	CERAMIC CHIP	0.001uF	10%	16V (EXCEPT E, JE)
C301	1-104-630-11	TANTAL. CHIP	33uF	20%	6.3V
C302	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C303	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V
C304	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C308	1-135-337-11	TANTAL. CHIP	1uF	20%	6.3V
C309	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V
C310	1-164-949-11	CERAMIC CHIP	0.047uF		16V
C311	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C312	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V
C313	1-104-847-11	TANTAL. CHIP	22uF	20%	4V
C314	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C315	1-104-847-11	TANTAL. CHIP	22uF	20%	4V
C316	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V
C317	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C318	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V
C319	1-107-813-11	TANTAL. CHIP	10uF	20%	6.3V
C320	1-135-337-11	TANTAL. CHIP	1uF	20%	6.3V
C321	1-104-929-11	TANTAL. CHIP	22uF	20%	6.3V
C322	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V
C324	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C325	1-164-346-11	CERAMIC CHIP	1uF		16V
C326	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V
C327	1-164-949-11	CERAMIC CHIP	0.047uF		16V
C328	1-164-937-11	CERAMIC CHIP	0.001uF	10%	16V
C329	1-164-949-11	CERAMIC CHIP	0.047uF		16V
C330	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V
C333	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C334	1-104-847-11	TANTAL. CHIP	22uF	20%	4V
C335	1-104-847-11	TANTAL. CHIP	22uF	20%	4V
C336	1-135-180-21	TANTALUM CHIP	3.3uF	20%	6.3V
C337	1-107-812-11	TANTAL. CHIP	4.7uF	20%	6.3V
C338	1-107-812-11	TANTAL. CHIP	4.7uF	20%	6.3V
C340	1-104-630-11	TANTAL. CHIP	33uF	20%	6.3V
C341	1-104-630-11	TANTAL. CHIP	33uF	20%	6.3V
C342	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C343	1-164-505-11	CERAMIC CHIP	2.2uF		16V
C344	1-107-815-11	TANTAL. CHIP	2.2uF	20%	4V
C345	1-135-145-11	TANTALUM CHIP	0.47uF	20%	25V
C346	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C347	1-107-816-11	TANTAL. CHIP	0.68uF	20%	10V
C348	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C350	1-164-874-11	CERAMIC CHIP	100PF	5%	16V
C351	1-164-949-11	CERAMIC CHIP	0.047uF		16V
C352	1-164-949-11	CERAMIC CHIP	0.047uF		16V
C354	1-107-816-11	TANTAL. CHIP	0.68uF	20%	10V
C355	1-107-813-11	TANTAL. CHIP	10uF	20%	6.3V
C358	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V
C359	1-164-937-11	CERAMIC CHIP	0.001uF	10%	16V (EXCEPT E, JE)
C366	1-164-937-11	CERAMIC CHIP	0.001uF	10%	16V (EXCEPT E, JE)
C368	1-164-937-11	CERAMIC CHIP	0.001uF	10%	16V (EXCEPT E, JE)
C369	1-164-937-11	CERAMIC CHIP	0.001uF	10%	16V (EXCEPT E, JE)
C501	1-104-929-11	TANTAL. CHIP	22uF	20%	6.3V
C502	1-104-847-11	TANTAL. CHIP	22uF	20%	4V
C503	1-104-847-11	TANTAL. CHIP	22uF	20%	4V
C504	1-107-811-11	TANTAL. CHIP	47uF	20%	4V
C506	1-107-813-11	TANTAL. CHIP	10uF	20%	6.3V
C508	1-164-937-11	CERAMIC CHIP	0.001uF	10%	16V
C509	1-107-811-11	TANTAL. CHIP	47uF	20%	4V
C510	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C511	1-164-937-11	CERAMIC CHIP	0.001uF	10%	16V
C512	1-164-939-11	CERAMIC CHIP	0.0022uF	10%	16V
C513	1-164-937-11	CERAMIC CHIP	0.001uF	10%	16V
C514	1-165-176-11	CERAMIC CHIP	0.047uF	10%	16V
C519	1-104-929-11	TANTAL. CHIP	22uF	20%	6.3V
C520	1-164-937-11	CERAMIC CHIP	0.001uF	10%	16V
C521	1-164-227-11	CERAMIC CHIP	0.022uF	10%	25V
C522	1-135-191-21	TANTAL. CHIP	0.22uF	10%	20V
C523	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C524	1-164-677-11	CERAMIC CHIP	0.033uF	10%	16V
C525	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C526	1-164-949-11	CERAMIC CHIP	0.047uF		16V
C527	1-162-979-11	CERAMIC CHIP	0.0027uF	10%	50V
C529	1-164-939-11	CERAMIC CHIP	0.0022uF	10%	16V
C530	1-164-874-11	CERAMIC CHIP	100PF	5%	16V
C531	1-164-941-11	CERAMIC CHIP	0.0047uF	10%	16V
C532	1-104-847-11	TANTAL. CHIP	22uF	20%	4V
C533	1-104-847-11	TANTAL. CHIP	22uF	20%	4V
C534	1-164-227-11	CERAMIC CHIP	0.022uF	10%	25V
C535	1-164-933-11	CERAMIC CHIP	220PF	10%	16V
C536	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C537	1-135-181-21	TANTALUM CHIP	4.7uF	20%	6.3V
C538	1-164-949-11	CERAMIC CHIP	0.047uF		16V
C539	1-164-489-11	CERAMIC CHIP	0.22uF	10%	16V
C540	1-165-112-11	CERAMIC CHIP	0.33uF		16V
C541	1-164-941-11	CERAMIC CHIP	0.0047uF	10%	16V
C542	1-104-813-11	TANTAL. CHIP	10uF	20%	16V
C543	1-164-005-11	CERAMIC CHIP	0.47uF		25V
C544	1-164-005-11	CERAMIC CHIP	0.47uF		25V
C545	1-164-937-11	CERAMIC CHIP	0.001uF	10%	16V
C546	1-165-176-11	CERAMIC CHIP	0.047uF	10%	16V
C547	1-164-874-11	CERAMIC CHIP	100PF	5%	16V
C548	1-164-933-11	CERAMIC CHIP	220PF	10%	16V
C549	1-164-490-11	CERAMIC CHIP	0.068uF		16V
C550	1-164-677-11	CERAMIC CHIP	0.033uF	10%	16V
C551	1-164-916-11	CERAMIC CHIP	82PF	5%	16V
C552	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C553	1-164-949-11	CERAMIC CHIP	0.047uF		16V
C554	1-164-949-11	CERAMIC CHIP	0.047uF		16V
C555	1-164-874-11	CERAMIC CHIP	100PF	5%	16V
C556	1-107-811-11	TANTAL. CHIP	47uF	20%	4V
C557	1-164-949-11	CERAMIC CHIP	0.047uF		16V
C558	1-164-949-11	CERAMIC CHIP	0.047uF		16V
C561	1-104-929-11	TANTAL. CHIP	22uF	20%	6.3V
C565	1-164-937-11	CERAMIC CHIP	0.001uF	10%	16V
C567	1-164-949-11	CERAMIC CHIP	0.047uF		16V
C570	1-164-949-11	CERAMIC CHIP	0.047uF		16V
C572	1-104-929-11	TANTAL. CHIP	22uF	20%	6.3V
C574	1-164-005-11	CERAMIC CHIP	0.47uF		25V
C578	1-164-677-11	CERAMIC CHIP	0.033uF	10%	16V
C581	1-135-246-11	TANTAL. CHIP	33uF	20%	6.3V
C582	1-135-208-11	TANTAL. CHIP	1uF	10%	10V
C586	1-164-346-11	CERAMIC CHIP	1uF		16V
C587	1-164-346-11	CERAMIC CHIP	1uF		16V
C588	1-164-949-11	CERAMIC CHIP	0.047uF		16V
C589	1-164-346-11	CERAMIC CHIP	1uF		16V
C590	1-164-346-11	CERAMIC CHIP	1uF		16V
C591	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C592	1-164-346-11	CERAMIC CHIP	1uF		16V
C593	1-164-949-11	CERAMIC CHIP	0.047uF		16V
C596	1-135-208-11	TANTAL. CHIP	1uF	10%	10V
C601	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C602	1-164-874-11	CERAMIC CHIP	100PF	5%	16V
C603	1-164-941-11	CERAMIC CHIP	0.0047uF	10%	16V
C604	1-164-227-11	CERAMIC CHIP	0.022uF	10%	25V
C605	1-164-850-11	CERAMIC CHIP	10PF	0.5PF	16V
C606	1-162-952-11	CERAMIC CHIP	82PF	5%	50V
C608	1-164-949-11	CERAMIC CHIP	0.047uF		16V
C622	1-107-813-11	TANTAL. CHIP	10uF	20%	6.3V
C623	1-164-949-11	CERAMIC CHIP	0.047uF		16V
C624	1-104-700-11	CERAMIC CHIP	0.027uF	10%	16V
C626	1-164-005-11	CERAMIC CHIP	0.47uF		25V
C627	1-164-949-11	CERAMIC CHIP	0.047uF		16V
C628	1-164-949-11	CERAMIC CHIP	0.047uF		16V
C629	1-164-949-11	CERAMIC CHIP	0.047uF		16V
C631	1-164-949-11	CERAMIC CHIP	0.047uF		16V
C632	1-164-949-11	CERAMIC CHIP	0.047uF		16V
C645	1-109-847-11	TANTAL. CHIP	0.47uF	20%	16V
C646	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C647	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C658	1-164-847-11	CERAMIC CHIP	7PF	0.5PF	16V
C659	1-164-847-11	CERAMIC CHIP	7PF	0.5PF	16V
C660	1-164-005-11	CERAMIC CHIP	0.47uF		25V
C661	1-165-112-11	CERAMIC CHIP	0.33uF		16V
C662	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C663	1-165-112-11	CERAMIC CHIP	0.33uF		16V
C664	1-107-820-11	CERAMIC CHIP	0.1uF		16V
C801	1-104-813-11	TANTAL. CHIP	10uF	20%	16V
C802	1-164-940-11	CERAMIC CHIP	0.0033uF	10%	16V
C803	1-164-940-11	CERAMIC CHIP	0.0033uF	10%	16V
C805	1-164-949-11	CERAMIC CHIP	0.047uF		16V
C806	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C808	1-164-850-11	CERAMIC CHIP	10PF	0.5PF	16V
C809	1-164-850-11	CERAMIC CHIP	10PF	0.5PF	16V
C810	1-164-949-11	CERAMIC CHIP	0.047uF		16V
C811	1-164-949-11	CERAMIC CHIP	0.047uF		16V
C813	1-164-949-11	CERAMIC CHIP	0.047uF		16V
C815	1-164-949-11	CERAMIC CHIP	0.047uF		16V
C820	1-164-949-11	CERAMIC CHIP	0.047uF		16V
C821	1-164-949-11	CERAMIC CHIP	0.047uF		16V
C822	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C823	1-164-936-11	CERAMIC CHIP	680PF	10%	16V
C824	1-164-949-11	CERAMIC CHIP	0.047uF		16V
C826	1-164-949-11	CERAMIC CHIP	0.047uF		16V
C827	1-164-949-11	CERAMIC CHIP	0.047uF		16V
C830	1-164-346-11	CERAMIC CHIP	1uF		16V
C831	1-165-176-11	CERAMIC CHIP	0.047uF	10%	16V
C832	1-165-112-11	CERAMIC CHIP	0.33uF		16V
C833	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C834	1-104-630-11	TANTAL. CHIP	33uF	20%	6.3V
C835	1-164-937-11	CERAMIC CHIP	0.001uF	10%	16V
C838	1-164-949-11	CERAMIC CHIP	0.047uF		16V
C839	1-164-949-11	CERAMIC CHIP	0.047uF		16V
C840	1-165-112-11	CERAMIC CHIP	0.33uF		16V
C841	1-164-949-11	CERAMIC CHIP	0.047uF		16V
C842	1-164-949-11	CERAMIC CHIP	0.047uF		16V
C843	1-164-949-11	CERAMIC CHIP	0.047uF		16V
C844	1-164-949-11	CERAMIC CHIP	0.047uF		16V
C5013	1-164-245-11	CERAMIC CHIP	0.015uF	10%	25V
C5014	1-164-245-11	CERAMIC CHIP	0.015uF	10%	25V
C5015	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C5016	1-164-949-11	CERAMIC CHIP	0.047uF		16V
C5022	1-164-363-11	CERAMIC CHIP	560PF	5%	50V
C5026	1-164-935-11	CERAMIC CHIP	470PF	10%	16V
C5030	1-164-941-11	CERAMIC CHIP	0.0047uF	10%	16V
C5031	1-107-814-11	TANTAL. CHIP	33uF	20%	10V
C5056	1-164-935-11	CERAMIC CHIP	470PF	10%	16V
C5057	1-164-937-11	CERAMIC CHIP	0.001uF	10%	16V (EXCEPT E, JE)
C5059	1-165-176-11	CERAMIC CHIP	0.047uF	10%	16V
C5092	1-164-940-11	CERAMIC CHIP	0.0033uF	10%	16V
C5094	1-107-814-11	TANTAL. CHIP	33uF	20%	10V
C5095	1-104-700-11	CERAMIC CHIP	0.027uF	10%	16V
C5096	1-164-940-11	CERAMIC CHIP	0.0033uF	10%	16V
C5097	1-107-817-11	TANTAL. CHIP	0.33uF	20%	16V
C5098	1-164-360-11	CERAMIC CHIP	0.1uF		16V

< CONNECTOR >

Ref. No.	Part No.	Description	Remark
CN501	1-573-931-11	CONNECTOR, FFC/FPC (ZIF) 22P	
CN801	1-573-927-11	CONNECTOR, FFC/FPC (ZIF) 18P	
CN802	1-573-346-21	CONNECTOR, FFC/FPC 6P	
CN803	1-573-357-11	CONNECTOR, FFC/FPC 17P	
CN804	1-573-928-11	CONNECTOR, FFC/FPC (ZIF) 19P	

< DIODE >

Ref. No.	Part No.	Description		Remark
D301	8-719-046-90	DIODE	MA2S111	
D302	8-719-046-90	DIODE	MA2S111	
D303	8-719-046-88	DIODE	MA2S082	
D304	8-719-046-88	DIODE	MA2S082	
D305	8-719-046-88	DIODE	MA2S082	
D307	8-719-989-03	DIODE	DAN222	
D308	8-719-989-00	DIODE	DA221	
D309	8-719-989-03	DIODE	DAN222	
D310	8-719-026-26	DIODE	MA786WK	
D501	8-719-975-33	DIODE	RB110C	
D504	8-719-023-69	DIODE	SB007T03Q	
D505	8-719-031-17	DIODE	SB007-03Q	
D506	8-719-046-88	DIODE	MA2S082	
D601	8-719-981-25	DIODE	KV1450	
D801	8-719-938-72	DIODE	SB01-05CP	
D802	8-719-420-79	DIODE	MA724	
D803	8-719-989-08	DIODE	RB717F	
D804	8-719-046-84	DIODE	MA2S728	
D805	8-719-988-82	DIODE	RB715F	
D806	8-719-989-08	DIODE	RB717F	
D808	8-719-033-72	LED	CL-181UR-C-TS (REC ➛)	
D809	8-719-989-08	DIODE	RB717F	
D810	8-719-989-08	DIODE	RB717F	
D811	8-719-046-84	DIODE	MA2S728	
D812	8-719-046-84	DIODE	MA2S728	
D813	8-719-046-84	DIODE	MA2S728	
D814	8-719-046-84	DIODE	MA2S728	

< FERRITE BEAD >

Ref. No.	Part No.	Description	Remark
FB103	1-414-385-11	INDUCTOR, FERRITE BEAD 1K	(EXCEPT E, JE)
FB135	1-414-385-11	INDUCTOR, FERRITE BEAD 1K	(EXCEPT E, JE)
FB203	1-414-385-11	INDUCTOR, FERRITE BEAD 1K	(EXCEPT E, JE)
FB235	1-414-385-11	INDUCTOR, FERRITE BEAD 1K	(EXCEPT E, JE)
FB301	1-414-228-11	INDUCTOR, FERRITE BEAD 600	(EXCEPT E, JE)
FB302	1-414-228-11	INDUCTOR, FERRITE BEAD 600	(EXCEPT E, JE)
FB303	1-414-228-11	INDUCTOR, FERRITE BEAD 600	(EXCEPT E, JE)
FB304	1-414-228-11	INDUCTOR, FERRITE BEAD 600	(EXCEPT E, JE)
FB305	1-414-228-11	INDUCTOR, FERRITE BEAD 600	(EXCEPT E, JE)
FB310	1-414-385-11	INDUCTOR, FERRITE BEAD 1K	(EXCEPT E, JE)
FB311	1-414-385-11	INDUCTOR, FERRITE BEAD 1K	(EXCEPT E, JE)
FB601	1-414-228-11	INDUCTOR, FERRITE BEAD 600	(EXCEPT E, JE)
FB602	1-414-228-11	INDUCTOR, FERRITE BEAD 600	(EXCEPT E, JE)
FB603	1-414-228-11	INDUCTOR, FERRITE BEAD 600	(EXCEPT E, JE)
FB610	1-414-385-11	INDUCTOR, FERRITE BEAD 1K	(EXCEPT E, JE)
FB623	1-414-385-11	INDUCTOR, FERRITE BEAD 1K	(EXCEPT E, JE)
FB840	1-414-228-11	INDUCTOR, FERRITE BEAD 600	(EXCEPT E, JE)

< IC >

Ref. No.	Part No.	Description		Remark
IC301	8-759-257-94	IC	TK11245AMTL	
IC302	8-759-711-85	IC	NJM4580E-D	
IC303	8-759-512-62	IC	CXA1497N	
IC304	8-759-252-90	IC	TLV2362IPW-ELM1500	
IC305	8-759-252-90	IC	TLV2362IPW-ELM1500	
IC306	8-759-252-39	IC	AK4502-VS-E1	
IC307	8-759-252-90	IC	TLV2362IPW-ELM1500	
IC308	8-759-166-95	IC	LA4805V-TLM	
IC309	8-759-165-04	IC	TK11230MTL	
IC310	8-759-234-77	IC	TC4S66F	
IC311	8-759-252-43	IC	TK15210MTL	
IC312	8-759-252-43	IC	TK15210MTL	
IC314	8-759-255-51	IC	DS1267E-50	
IC315	8-759-255-51	IC	DS1267E-50	
IC316	8-759-710-79	IC	NJM2107F	
IC317	8-759-234-77	IC	TC4S66F	
IC318	8-759-255-92	IC	XC62AP3201MR	
IC319	8-759-257-94	IC	TK11245AMTL	
IC320	8-759-173-00	IC	XC61AN1102MR	
IC501	8-752-068-49	IC	CXA1861R	
IC502	8-752-064-33	IC	CXA1380N	
IC505	8-759-082-60	IC	TC7S66FU	
IC506	8-759-252-31	IC	MB88347APFV-EF	
IC507	8-752-055-94	IC	CXA1602R	
IC508	8-759-058-57	IC	TC7S04FU-TE85L	
IC509	8-759-084-72	IC	MPC1718FU	
IC510	8-759-058-61	IC	TC7S08FU-TE85L	
IC511	8-759-252-38	IC	CXD8498N-ELL2000	
IC512	8-759-710-79	IC	NJM2107F	
IC513	8-759-255-49	IC	DS1267E-10	
IC514	8-759-255-51	IC	DS1267E-50	
IC515	8-759-082-60	IC	TC7S66FU	
IC516	8-759-058-61	IC	TC7S08FU	
IC517	8-759-259-06	IC	XC61AN1902MR	
IC601	8-752-364-98	IC	CXD2525R-1	
IC602	8-752-363-57	IC	CXD2526AR	
IC603	8-752-365-90	IC	CXD2531BR	
IC604	8-759-255-94	IC	XC62AP3102MR	
IC605	8-752-362-58	IC	CXK41V4400ATM-10	
IC606	8-759-082-61	IC	TC4W53FU	
IC607	8-759-710-79	IC	NJM2107F	
IC608	8-759-255-94	IC	XC62AP3102MR	
IC801	8-759-252-27	IC	RS5RJ3720B	
IC802	8-759-252-54	IC	S-80745SL-A9	
IC803	8-759-267-57	IC	MB89133A-PFM-170	
IC804	8-759-252-57	IC	S-2900AUT	
IC805	8-752-852-81	IC	CXP81848-603R	
IC806	8-759-252-29	IC	S-80725SL-AN	
IC807	8-759-255-94	IC	XC62AP3102MR	
IC808	8-759-082-61	IC	TC4W53FU	
IC809	8-759-288-49	IC	XC61AN2202MR	
IC810	8-759-259-06	IC	XC61AN1902MR	
IC811	8-759-058-57	IC	TC7S04FU	

< JACK >

Ref. No.	Part No.	Description	Remark
J201	8-759-252-45	IC GP1F365R (OPT/LINE IN)	
J301	1-764-460-21	JACK (MIC, PLUG IN POWER)	
J302	1-764-453-11	JACK (∩/REMOTE)	
J303	1-764-460-11	JACK (LINE OUT)	

< COIL >

Ref. No.	Part No.	Description	Remark
L308	1-412-988-11	INDUCTOR 5.6uH (EXCEPT E, JE)	
L501	1-414-410-21	INDUCTOR (SMALL TYPE) 10.0uH	
L502	1-414-410-21	INDUCTOR (SMALL TYPE) 10.0uH	
L503	1-414-410-21	INDUCTOR (SMALL TYPE) 10.0uH	
L504	1-402-831-21	COIL, CHOKE 68uH	
L505	1-414-410-21	INDUCTOR (SMALL TYPE) 10.0uH	
L506	1-414-203-11	INDUCTOR 100uH	
L507	1-412-991-11	INDUCTOR 10uH	
L508	1-414-203-11	INDUCTOR 100uH	
L509	1-414-203-11	INDUCTOR 100uH	
L603	1-414-357-41	INDUCTOR 1uH	
L801	1-412-031-11	INDUCTOR CHIP 47uH	

< LINE FILTER >

Ref. No.	Part No.	Description	Remark
LF302	1-403-601-21	FILTER, COMMON MODE	
LF303	1-403-601-21	FILTER, COMMON MODE (EXCEPT E, JE)	
LF304	1-403-601-21	FILTER, COMMON MODE (EXCEPT E, JE)	

< TRANSISTOR >

Ref. No.	Part No.	Description		Remark
Q101	8-729-929-32	TRANSISTOR	DTC144TE	
Q102	8-729-144-16	TRANSISTOR	2SD2228-D44D45	
Q201	8-729-929-32	TRANSISTOR	DTC144TE	
Q202	8-729-144-16	TRANSISTOR	2SD2228-D44D45	
Q302	8-729-930-13	TRANSISTOR	UMH2	
Q303	8-729-928-81	TRANSISTOR	DTC144EE	
Q304	8-729-144-16	TRANSISTOR	2SD2228-D44D45	
Q305	8-729-928-31	TRANSISTOR	DTA114YE	
Q306	8-729-927-99	TRANSISTOR	2SC4617	
Q307	8-729-928-81	TRANSISTOR	DTC144EE	
Q308	8-729-928-81	TRANSISTOR	DTC144EE	
Q309	8-729-930-00	TRANSISTOR	UMD2	
Q310	8-729-930-05	TRANSISTOR	UMD3	
Q311	8-729-930-00	TRANSISTOR	UMD2	
Q312	8-729-928-19	TRANSISTOR	2SA1774R	
Q313	8-729-930-05	TRANSISTOR	UMD3	
Q501	8-729-422-39	TRANSISTOR	XN4404	
Q502	8-729-928-27	TRANSISTOR	DTA144EE	
Q503	8-729-928-85	TRANSISTOR	DTC114YE	
Q506	8-729-923-45	TRANSISTOR	2SB1308-QR	
Q508	8-729-928-81	TRANSISTOR	DTC144EE	
Q510	8-729-023-89	TRANSISTOR	2SJ305	
Q511	8-729-927-59	TRANSISTOR	UMZ1	
Q512	8-729-928-27	TRANSISTOR	DTA144EE	
Q514	8-729-024-46	TRANSISTOR	2SK2035	
Q515	8-729-930-13	TRANSISTOR	UMH2	
Q801	8-729-927-99	TRANSISTOR	2SC4617	
Q802	8-729-930-00	TRANSISTOR	UMD2	
Q803	8-729-928-81	TRANSISTOR	DTC144EE	
Q804	8-729-928-81	TRANSISTOR	DTC144EE	
Q805	8-729-927-99	TRANSISTOR	2SC4617	
Q806	8-729-928-81	TRANSISTOR	DTC144EE	
Q808	8-729-930-00	TRANSISTOR	UMD2	
Q809	8-729-023-89	TRANSISTOR	2SJ305	

< RESISTOR >

Ref. No.	Part No.	Description				Remark
R101	1-208-703-11	METAL CHIP	6.8K	0.50%	1/16W	
R102	1-218-975-11	METAL GLAZE	68K	5%	1/16W	
R103	1-216-864-11	METAL CHIP	0	5%	1/16W	(E, JE)
R107	1-208-699-11	METAL CHIP	4.7K	0.50%	1/16W	
R108	1-208-679-11	METAL CHIP	680	0.50%	1/16W	
R110	1-220-398-11	METAL GLAZE	1.5M	5%	1/16W	
R111	1-218-734-11	METAL CHIP	56K	0.50%	1/16W	
R112	1-208-714-11	METAL CHIP	20K	0.50%	1/16W	
R114	1-208-715-11	METAL CHIP	22K	0.50%	1/16W	
R115	1-208-681-11	METAL CHIP	820	0.50%	1/16W	
R116	1-208-715-11	METAL CHIP	22K	0.50%	1/16W	
R117	1-208-715-11	METAL CHIP	22K	0.50%	1/16W	
R118	1-208-715-11	METAL CHIP	22K	0.50%	1/16W	
R119	1-208-683-11	METAL CHIP	1K	0.50%	1/16W	
R120	1-208-683-11	METAL CHIP	1K	0.50%	1/16W	
R121	1-208-715-11	METAL CHIP	22K	0.50%	1/16W	
R122	1-208-715-11	METAL CHIP	22K	0.50%	1/16W	
R123	1-218-734-11	METAL CHIP	56K	0.50%	1/16W	
R124	1-208-715-11	METAL CHIP	22K	0.50%	1/16W	
R125	1-208-715-11	METAL CHIP	22K	0.50%	1/16W	
R126	1-218-736-11	METAL CHIP	68K	0.50%	1/16W	
R127	1-208-719-11	METAL CHIP	33K	0.50%	1/16W	
R128	1-208-719-11	METAL CHIP	33K	0.50%	1/16W	
R129	1-218-736-11	METAL CHIP	68K	0.50%	1/16W	
R130	1-208-696-11	METAL CHIP	3.6K	0.50%	1/16W	
R131	1-208-685-11	METAL CHIP	1.2K	0.50%	1/16W	
R132	1-218-989-11	METAL GLAZE	1M	5%	1/16W	
R133	1-216-789-11	METAL CHIP	2.2	5%	1/16W	
R134	1-208-683-11	METAL CHIP	1K	0.50%	1/16W	
R135	1-216-864-11	METAL CHIP	0	5%	1/16W	(E, JE)
R136	1-218-990-11	METAL GLAZE	0	5%	1/16W	
R139	1-218-945-11	METAL GLAZE	220	5%	1/16W	
R140	1-218-945-11	METAL GLAZE	220	5%	1/16W	
R141	1-218-977-11	METAL GLAZE	100K	5%	1/16W	
R142	1-218-990-11	METAL GLAZE	0	5%	1/16W	
R143	1-218-990-11	METAL GLAZE	0	5%	1/16W	(E, JE)
R144	1-218-990-11	METAL GLAZE	0	5%	1/16W	(E, JE)
R201	1-208-703-11	METAL CHIP	6.8K	0.50%	1/16W	

MAIN

Ref. No.	Part No.	Description				Remark
R202	1-218-975-11	METAL GLAZE	68K	5%	1/16W	
R203	1-216-864-11	METAL CHIP	0	5%	1/16W	(E, JE)
R207	1-208-699-11	METAL CHIP	4.7K	0.50%	1/16W	
R208	1-208-679-11	METAL CHIP	680	0.50%	1/16W	
R210	1-218-988-11	METAL GLAZE	820K	5%	1/16W	
R211	1-218-734-11	METAL CHIP	56K	0.50%	1/16W	
R212	1-208-714-11	METAL CHIP	20K	0.50%	1/16W	
R214	1-208-715-11	METAL CHIP	22K	0.50%	1/16W	
R215	1-208-681-11	METAL CHIP	820	0.50%	1/16W	
R216	1-208-715-11	METAL CHIP	22K	0.50%	1/16W	
R217	1-208-715-11	METAL CHIP	22K	0.50%	1/16W	
R218	1-208-715-11	METAL CHIP	22K	0.50%	1/16W	
R219	1-208-683-11	METAL CHIP	1K	0.50%	1/16W	
R220	1-208-683-11	METAL CHIP	1K	0.50%	1/16W	
R221	1-208-715-11	METAL CHIP	22K	0.50%	1/16W	
R222	1-208-715-11	METAL CHIP	22K	0.50%	1/16W	
R223	1-218-734-11	METAL CHIP	56K	0.50%	1/16W	
R224	1-208-715-11	METAL CHIP	22K	0.50%	1/16W	
R225	1-208-715-11	METAL CHIP	22K	0.50%	1/16W	
R226	1-218-736-11	METAL CHIP	68K	0.50%	1/16W	
R227	1-208-719-11	METAL CHIP	33K	0.50%	1/16W	
R228	1-208-719-11	METAL CHIP	33K	0.50%	1/16W	
R229	1-218-736-11	METAL CHIP	68K	0.50%	1/16W	
R230	1-208-696-11	METAL CHIP	3.6K	0.50%	1/16W	
R231	1-208-685-11	METAL CHIP	1.2K	0.50%	1/16W	
R232	1-218-989-11	METAL GLAZE	1M	5%	1/16W	
R233	1-216-789-11	METAL CHIP	2.2	5%	1/16W	
R234	1-208-683-11	METAL CHIP	1K	0.50%	1/16W	
R235	1-216-864-11	METAL CHIP	0	5%	1/16W	(E, JE)
R236	1-218-990-11	METAL GLAZE	0	5%	1/16W	
R239	1-218-945-11	METAL GLAZE	220	5%	1/16W	
R240	1-218-945-11	METAL GLAZE	220	5%	1/16W	
R241	1-218-977-11	METAL GLAZE	100K	5%	1/16W	
R242	1-218-990-11	METAL GLAZE	0	5%	1/16W	
R243	1-218-990-11	METAL GLAZE	0	5%	1/16W	(E, JE)
R244	1-218-990-11	METAL GLAZE	0	5%	1/16W	(E, JE)
R301	1-218-965-11	METAL GLAZE	10K	5%	1/16W	
R304	1-218-973-11	METAL GLAZE	47K	5%	1/16W	
R305	1-218-977-11	METAL GLAZE	100K	5%	1/16W	
R306	1-208-721-11	METAL CHIP	39K	0.50%	1/16W	
R307	1-208-715-11	METAL CHIP	22K	0.50%	1/16W	
R308	1-216-864-11	METAL CHIP	0	5%	1/16W	(E, JE)
R309	1-216-864-11	METAL CHIP	0	5%	1/16W	
R310	1-216-864-11	METAL CHIP	0	5%	1/16W	(E, JE)
R312	1-218-977-11	METAL GLAZE	100K	5%	1/16W	
R314	1-218-965-11	METAL GLAZE	10K	5%	1/16W	
R315	1-208-721-11	METAL CHIP	39K	0.50%	1/16W	
R316	1-220-209-11	METAL GLAZE	160K	5%	1/16W	
R317	1-208-703-11	METAL CHIP	6.8K	0.50%	1/16W	
R318	1-208-703-11	METAL CHIP	6.8K	0.50%	1/16W	
R319	1-218-965-11	METAL GLAZE	10K	5%	1/16W	
R320	1-216-861-11	METAL CHIP	2.2M	5%	1/16W	
R321	1-218-983-11	METAL GLAZE	330K	5%	1/16W	
R322	1-208-719-11	METAL CHIP	33K	0.50%	1/16W	
R323	1-208-681-11	METAL CHIP	820	0.50%	1/16W	
R324	1-218-965-11	METAL GLAZE	10K	5%	1/16W	
R325	1-220-162-11	METAL GLAZE	20	5%	1/16W	
R326	1-216-861-11	METAL CHIP	2.2M	5%	1/16W	
R327	1-208-691-11	METAL GLAZE	2.2K	0.5%	1/16W	
R328	1-208-691-11	METAL GLAZE	2.2K	0.5%	1/16W	
R329	1-208-715-11	METAL CHIP	22K	0.50%	1/16W	
R330	1-208-715-11	METAL CHIP	22K	0.50%	1/16W	
R331	1-218-975-11	METAL GLAZE	68K	5%	1/16W	
R332	1-218-965-11	METAL GLAZE	10K	5%	1/16W	
R333	1-208-699-11	METAL CHIP	4.7K	0.50%	1/16W	
R334	1-218-965-11	METAL GLAZE	10K	5%	1/16W	
R335	1-208-715-11	METAL CHIP	22K	0.50%	1/16W	
R337	1-216-789-11	METAL CHIP	2.2	5%	1/16W	
R343	1-208-720-11	METAL CHIP	36K	0.50%	1/16W	
R344	1-218-977-11	METAL GLAZE	100K	5%	1/16W	
R345	1-208-720-11	METAL CHIP	36K	0.50%	1/16W	
R346	1-218-967-11	METAL GLAZE	15K	5%	1/16W	
R347	1-218-977-11	METAL GLAZE	100K	5%	1/16W	
R348	1-218-977-11	METAL GLAZE	100K	5%	1/16W	
R351	1-218-990-11	METAL GLAZE	0	5%	1/16W	(E, JE)
R352	1-218-990-11	METAL GLAZE	0	5%	1/16W	(E, JE)
R353	1-218-977-11	METAL GLAZE	100K	5%	1/16W	
R354	1-208-683-11	METAL CHIP	1K	0.50%	1/16W	
R355	1-218-979-11	METAL GLAZE	150K	5%	1/16W	
R356	1-218-985-11	METAL GLAZE	470K	5%	1/16W	
R357	1-208-721-11	METAL CHIP	39K	0.50%	1/16W	
R358	1-208-719-11	METAL CHIP	33K	0.50%	1/16W	
R359	1-216-864-11	METAL CHIP	0	5%	1/16W	
R361	1-216-864-11	METAL CHIP	0	5%	1/16W	(E, JE)
R362	1-216-864-11	METAL CHIP	0	5%	1/16W	(E, JE)
R363	1-216-864-11	METAL CHIP	0	5%	1/16W	(E, JE)
R364	1-216-864-11	METAL CHIP	0	5%	1/16W	(E, JE)
R501	1-218-979-11	METAL GLAZE	150K	5%	1/16W	
R502	1-218-950-11	METAL GLAZE	560	5%	1/16W	
R506	1-218-976-11	METAL GLAZE	82K	5%	1/16W	
R507	1-218-957-11	METAL GLAZE	2.2K	5%	1/16W	
R510	1-218-980-11	METAL GLAZE	180K	5%	1/16W	
R511	1-218-989-11	METAL GLAZE	1M	5%	1/16W	
R512	1-220-214-11	METAL GLAZE	430K	5%	1/16W	
R513	1-218-989-11	METAL GLAZE	1M	5%	1/16W	
R514	1-218-973-11	METAL GLAZE	47K	5%	1/16W	
R515	1-218-980-11	METAL GLAZE	180K	5%	1/16W	
R516	1-218-975-11	METAL GLAZE	68K	5%	1/16W	
R518	1-208-701-11	METAL CHIP	5.6K	0.50%	1/16W	
R519	1-208-679-11	METAL CHIP	680	0.50%	1/16W	

Ref. No.	Part No.	Description	Remark
R520	1-218-989-11	METAL GLAZE 1M 5% 1/16W	
R521	1-208-715-11	METAL CHIP 22K 0.50% 1/16W	
R522	1-208-701-11	METAL CHIP 5.6K 0.50% 1/16W	
R524	1-220-181-11	METAL GLAZE 750 5% 1/16W	
R525	1-208-701-11	METAL CHIP 5.6K 0.50% 1/16W	
R526	1-208-683-11	METAL CHIP 1K 0.50% 1/16W	
R527	1-218-967-11	METAL GLAZE 15K 5% 1/16W	
R529	1-208-717-11	METAL CHIP 27K 0.50% 1/16W	
R531	1-218-941-11	METAL GLAZE 100 5% 1/16W	
R533	1-218-945-11	METAL GLAZE 220 5% 1/16W	
R535	1-218-977-11	METAL GLAZE 100K 5% 1/16W	
R536	1-216-001-00	METAL CHIP 10 5% 1/10W	
R539	1-208-701-11	METAL CHIP 5.6K 0.50% 1/16W	
R540	1-208-699-11	METAL CHIP 4.7K 0.50% 1/16W	
R546	1-208-683-11	METAL CHIP 1K 0.50% 1/16W	
R547	1-218-957-11	METAL GLAZE 2.2K 5% 1/16W	
R549	1-218-957-11	METAL GLAZE 2.2K 5% 1/16W	
R550	1-218-978-11	METAL GLAZE 120K 5% 1/16W	
R551	1-218-989-11	METAL GLAZE 1M 5% 1/16W	
R553	1-218-968-11	METAL GLAZE 18K 5% 1/16W	
R556	1-208-715-11	METAL CHIP 22K 0.50% 1/16W	
R557	1-220-398-11	METAL GLAZE 1.5M 5% 1/16W	
R558	1-218-973-11	METAL GLAZE 47K 5% 1/16W	
R559	1-218-977-11	METAL GLAZE 100K 5% 1/16W	
R561	1-218-977-11	METAL GLAZE 100K 5% 1/16W	
R565	1-208-681-11	METAL CHIP 820 0.50% 1/16W	
R566	1-218-973-11	METAL GLAZE 47K 5% 1/16W	
R567	1-218-986-11	METAL GLAZE 560K 5% 1/16W	
R568	1-218-977-11	METAL GLAZE 100K 5% 1/16W	
R569	1-208-683-11	METAL CHIP 1K 0.50% 1/16W	
R571	1-218-949-11	METAL GLAZE 470 5% 1/16W	
R572	1-218-977-11	METAL GLAZE 100K 5% 1/16W	
R573	1-218-975-11	METAL GLAZE 68K 5% 1/16W	
R574	1-218-977-11	METAL GLAZE 100K 5% 1/16W	
R575	1-218-981-11	METAL GLAZE 220K 5% 1/16W	
R576	1-218-977-11	METAL GLAZE 100K 5% 1/16W	
R577	1-218-989-11	METAL GLAZE 1M 5% 1/16W	
R578	1-218-980-11	METAL GLAZE 180K 5% 1/16W	
R581	1-218-967-11	METAL GLAZE 15K 5% 1/16W	
R582	1-208-709-11	METAL CHIP 12K 0.50% 1/16W	
R590	1-218-983-11	METAL GLAZE 330K 5% 1/16W	
R592	1-218-977-11	METAL GLAZE 100K 5% 1/16W	
R593	1-218-977-11	METAL GLAZE 100K 5% 1/16W	
R594	1-218-977-11	METAL GLAZE 100K 5% 1/16W	
R601	1-218-967-11	METAL GLAZE 15K 5% 1/16W	
R602	1-218-965-11	METAL GLAZE 10K 5% 1/16W	
R603	1-208-703-11	METAL CHIP 6.8K 0.50% 1/16W	
R604	1-218-977-11	METAL GLAZE 100K 5% 1/16W	
R610	1-216-864-11	METAL CHIP 0 5% 1/16W	(E, JE)
R613	1-218-965-11	METAL GLAZE 10K 5% 1/16W	
R614	1-208-695-11	METAL CHIP 3.3K 0.50% 1/16W	
R615	1-218-965-11	METAL GLAZE 10K 5% 1/16W	
R617	1-216-864-11	METAL CHIP 0 5% 1/16W	
R621	1-216-864-11	METAL CHIP 0 5% 1/16W	(E, JE)
R622	1-216-864-11	METAL CHIP 0 5% 1/16W	(E, JE)
R623	1-216-864-11	METAL CHIP 0 5% 1/16W	(E, JE)
R624	1-216-864-11	METAL CHIP 0 5% 1/16W	(E, JE)
R630	1-216-864-11	METAL CHIP 0 5% 1/16W	
R631	1-218-990-11	METAL GLAZE 0 5% 1/16W	
R637	1-218-989-11	METAL GLAZE 1M 5% 1/16W	
R643	1-216-864-11	METAL CHIP 0 5% 1/16W	
R655	1-218-983-11	METAL GLAZE 330K 5% 1/16W	
R656	1-218-983-11	METAL GLAZE 330K 5% 1/16W	
R661	1-218-984-11	METAL GLAZE 390K 5% 1/16W	
R802	1-202-974-11	METAL GLAZE 3.3M 5% 1/16W	
R803	1-218-751-11	METAL CHIP 300K 0.50% 1/16W	
R804	1-218-744-11	METAL CHIP 150K 0.50% 1/16W	
R805	1-218-751-11	METAL CHIP 300K 0.50% 1/16W	
R806	1-218-744-11	METAL CHIP 150K 0.50% 1/16W	
R808	1-218-983-11	METAL GLAZE 330K 5% 1/16W	
R810	1-218-983-11	METAL GLAZE 330K 5% 1/16W	
R812	1-218-983-11	METAL GLAZE 330K 5% 1/16W	
R813	1-218-983-11	METAL GLAZE 330K 5% 1/16W	
R814	1-218-983-11	METAL GLAZE 330K 5% 1/16W	
R815	1-218-989-11	METAL GLAZE 1M 5% 1/16W	
R816	1-208-706-11	METAL CHIP 9.1K 0.50% 1/16W	
R817	1-218-983-11	METAL GLAZE 330K 5% 1/16W	
R818	1-218-983-11	METAL GLAZE 330K 5% 1/16W	
R819	1-218-983-11	METAL GLAZE 330K 5% 1/16W	
R820	1-218-983-11	METAL GLAZE 330K 5% 1/16W	
R821	1-218-989-11	METAL GLAZE 1M 5% 1/16W	
R822	1-218-989-11	METAL GLAZE 1M 5% 1/16W	
R823	1-218-732-11	METAL CHIP 47K 0.50% 1/16W	
R824	1-218-749-11	METAL CHIP 240K 0.50% 1/16W	
R825	1-218-983-11	METAL GLAZE 330K 5% 1/16W	
R826	1-218-973-11	METAL GLAZE 47K 5% 1/16W	
R827	1-208-699-11	METAL CHIP 4.7K 0.50% 1/16W	
R828	1-218-973-11	METAL GLAZE 47K 5% 1/16W	
R829	1-218-973-11	METAL GLAZE 47K 5% 1/16W	
R830	1-220-179-11	METAL GLAZE 510 5% 1/16W	
R831	1-208-699-11	METAL CHIP 4.7K 0.50% 1/16W	
R832	1-218-973-11	METAL GLAZE 47K 5% 1/16W	
R833	1-202-974-11	METAL GLAZE 3.3M 5% 1/16W	
R834	1-218-983-11	METAL GLAZE 330K 5% 1/16W	
R835	1-218-983-11	METAL GLAZE 330K 5% 1/16W	
R836	1-218-983-11	METAL GLAZE 330K 5% 1/16W	
R837	1-218-983-11	METAL GLAZE 330K 5% 1/16W	
R838	1-218-983-11	METAL GLAZE 330K 5% 1/16W	
R839	1-218-973-11	METAL GLAZE 47K 5% 1/16W	
R840	1-216-864-11	METAL CHIP 0 5% 1/16W	(E, JE)

MAIN

Ref.No.	Part No.	Description	Remark
R841	1-218-973-11	METAL GLAZE 47K 5% 1/16W	
R842	1-218-973-11	METAL GLAZE 47K 5% 1/16W	
R843	1-218-973-11	METAL GLAZE 47K 5% 1/16W	
R844	1-218-973-11	METAL GLAZE 47K 5% 1/16W	
R845	1-218-973-11	METAL GLAZE 47K 5% 1/16W	
R846	1-218-989-11	METAL GLAZE 1M 5% 1/16W	
R860	1-218-977-11	METAL GLAZE 100K 5% 1/16W	
R861	1-218-988-11	METAL GLAZE 820K 5% 1/16W	
R862	1-218-978-11	METAL GLAZE 120K 5% 1/16W	
R863	1-218-989-11	METAL GLAZE 1M 5% 1/16W	
R864	1-208-685-11	METAL CHIP 1.2K 0.50% 1/16W	
R865	1-218-965-11	METAL GLAZE 10K 5% 1/16W	
R866	1-218-977-11	METAL GLAZE 100K 5% 1/16W	
R867	1-218-988-11	METAL GLAZE 820K 5% 1/16W	
R868	1-218-977-11	METAL GLAZE 100K 5% 1/16W	
R870	1-218-977-11	METAL GLAZE 100K 5% 1/16W	
R871	1-218-983-11	METAL GLAZE 330K 5% 1/16W	
R872	1-218-965-11	METAL GLAZE 10K 5% 1/16W	
R873	1-218-977-11	METAL GLAZE 100K 5% 1/16W	
R874	1-218-985-11	METAL GLAZE 470K 5% 1/16W	
R875	1-218-985-11	METAL GLAZE 470K 5% 1/16W	
R876	1-202-974-11	METAL GLAZE 3.3M 5% 1/16W	
R877	1-202-974-11	METAL GLAZE 3.3M 5% 1/16W	
R878	1-202-974-11	METAL GLAZE 3.3M 5% 1/16W	
R880	1-202-974-11	METAL GLAZE 3.3M 5% 1/16W	
R881	1-202-974-11	METAL GLAZE 3.3M 5% 1/16W	
R882	1-218-990-11	METAL GLAZE 0 5% 1/16W	
R5001	1-208-685-11	METAL CHIP 1.2K 0.50% 1/16W	
R5010	1-208-683-11	METAL CHIP 1K 0.50% 1/16W	
R5011	1-208-683-11	METAL CHIP 1K 0.50% 1/16W	
R5012	1-208-683-11	METAL CHIP 1K 0.50% 1/16W	
R5014	1-208-683-11	METAL CHIP 1K 0.50% 1/16W	
R5015	1-208-719-11	METAL CHIP 33K 0.50% 1/16W	
R5016	1-208-719-11	METAL CHIP 33K 0.50% 1/16W	
R5017	1-218-975-11	METAL GLAZE 68K 5% 1/16W	
R5018	1-218-975-11	METAL GLAZE 68K 5% 1/16W	
R5020	1-216-860-11	METAL GLAZE 1.8M 5% 1/16W	
R5021	1-218-981-11	METAL GLAZE 220K 5% 1/16W	
R5027	1-218-965-11	METAL GLAZE 10K 5% 1/16W	
R5030	1-218-978-11	METAL GLAZE 120K 5% 1/16W	
R5032	1-218-975-11	METAL GLAZE 68K 5% 1/16W	
R5039	1-218-990-11	METAL GLAZE 0 5% 1/16W	
R5055	1-218-977-11	METAL GLAZE 100K 5% 1/16W	
R5056	1-218-990-11	METAL GLAZE 0 5% 1/16W	
R5067	1-218-980-11	METAL GLAZE 180K 5% 1/16W	
R5081	1-208-703-11	METAL CHIP 6.8K 0.50% 1/16W	
R5082	1-216-001-00	METAL CHIP 10 5% 1/10W	
R5092	1-218-944-11	METAL GLAZE 180 5% 1/16W	
R5095	1-220-398-11	METAL GLAZE 1.5M 5% 1/16W	
R5098	1-208-719-11	METAL CHIP 33K 0.50% 1/16W	
R5099	1-208-717-11	METAL CHIP 27K 0.50% 1/16W	
R5100	1-208-715-11	METAL CHIP 22K 0.50% 1/16W	
R5102	1-218-989-11	METAL GLAZE 1M 5% 1/16W	
R5103	1-208-699-11	METAL CHIP 4.7K 0.50% 1/16W	
R5105	1-218-965-11	METAL GLAZE 10K 5% 1/16W	
R5107	1-208-721-11	METAL CHIP 39K 0.50% 1/16W	
R5108	1-208-721-11	METAL CHIP 39K 0.50% 1/16W	
R5109	1-218-965-11	METAL GLAZE 10K 5% 1/16W	
R5116	1-216-796-11	METAL GLAZE 8.2 5% 1/16W	
R5117	1-218-965-11	METAL GLAZE 10K 5% 1/16W	
R5200	1-216-864-11	METAL CHIP 0 5% 1/16W	
R5202	1-218-990-11	METAL GLAZE 0 5% 1/16W	
R5206	1-216-013-00	METAL CHIP 33 5% 1/10W	
R5207	1-216-013-00	METAL CHIP 33 5% 1/10W	
		< SWITCH >	
S801	1-572-467-31	SWITCH, PUSH (1 KEY)(REC →)	
S802	1-571-275-31	SWITCH, SLIDE (HOLD →)	
S803	1-692-088-11	SWITCH, TACTILE (BASS BOOST)	
S804	1-572-473-11	SWITCH, TACTIL (CLOCK SET)	
S805	1-572-473-11	SWITCH, TACTIL (RESET)	
		< VIBRATOR >	
X602	1-760-173-11	VIBRATOR, CRYSTAL (45MHz)	
X801	1-760-172-11	VIBRATOR, CERAMIC (4.19MHz)	
X802	1-579-886-21	VIBRATOR, CRYSTAL (32.768kHz)	
X803	1-760-174-11	VIBRATOR, CERAMIC (12MHz)	

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Sony Corporation
Consumer A&V Products Company
Personal A&V Products Div.

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Quality Engineering Dept.

MZ-R2

SONY
SERVICE MANUAL

1994.09

US Model
Canadian Model
AEP Model
UK Model
E Model
Australian Model
Tourist Model

SUPPLEMENT-2

Revise your service manual as shown below due to parts supply classification has been changed.

☛: indicates revised portion.

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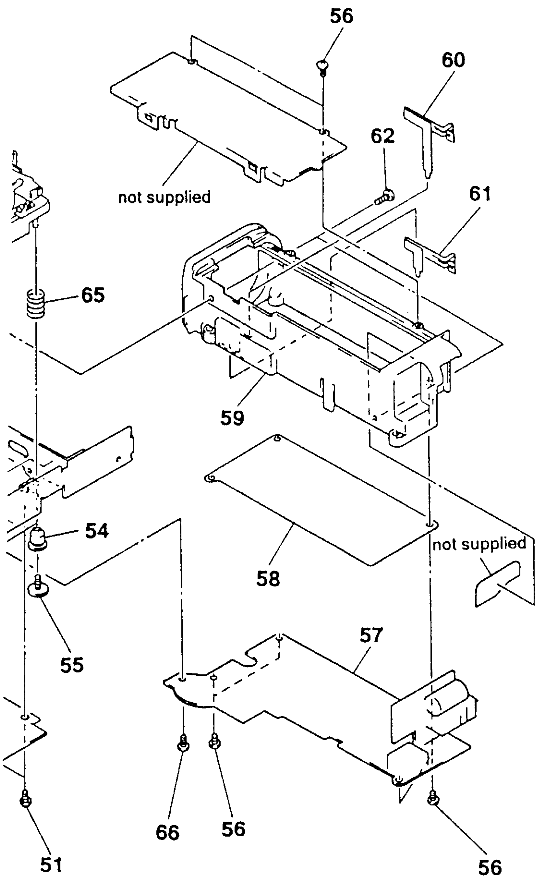
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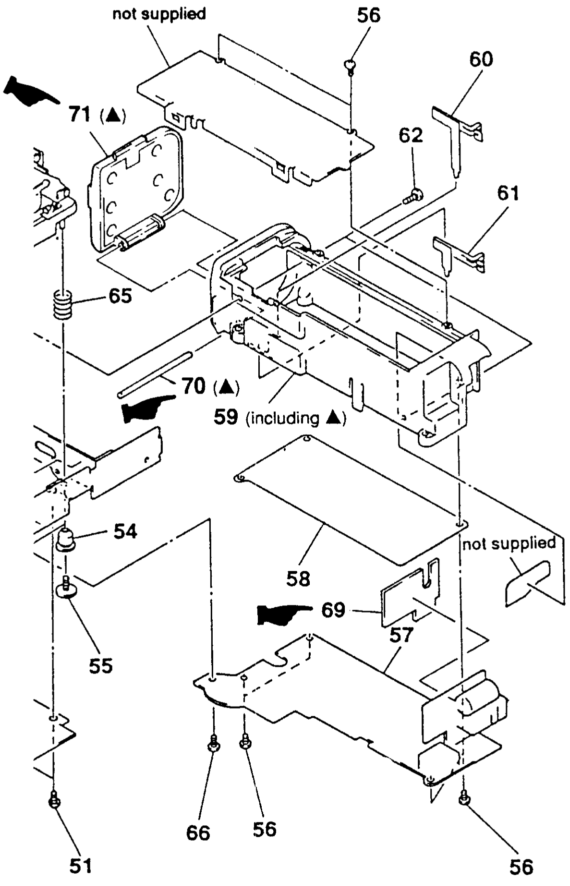
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<tr><td>☛</td><td>4-964-026-01</td><td>SHAFT (BATTERY CASE LID)</td></tr>
<tr><td>☛</td><td>X-4944-464-1</td><td>LID ASSY, BATTERY CASE</td></tr>
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☛: indicates revised portion.

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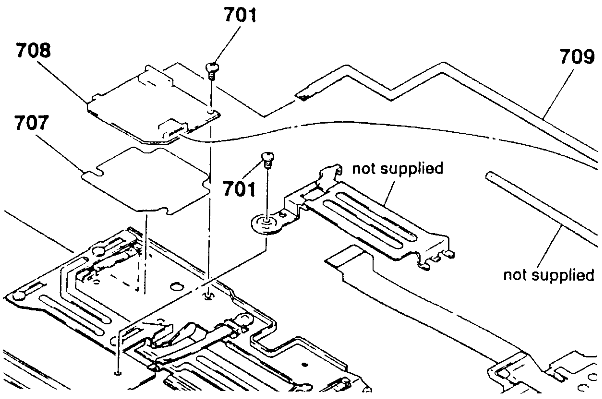
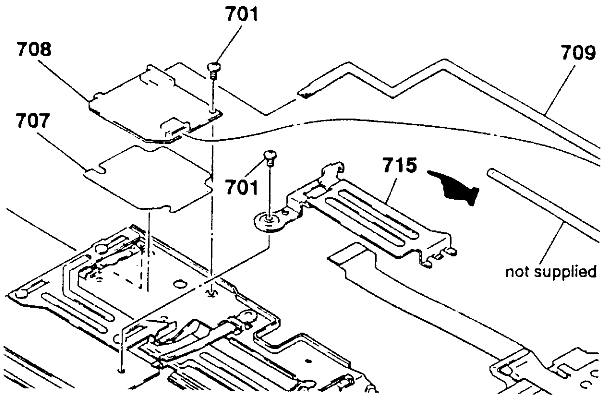
73	 701 708 709 707 not supplied 701 not supplied Ref. No. Part No. Description *715 not spplied	 701 708 709 707 715 701 not supplied Part No. Description 4-963-889-02 GUARD, HEAD ☛

9-959-799-81

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Consumer A&V Products Company
Personal A&V Products Div.

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REVISION HISTORY

Clicking the version allows you to jump to the revised page.
Also, clicking the version at the upper right on the revised page allows you to jump to the next revised page.

Ver.	Date	Description of Revision
1.0	2001.05	Correction of electrical adjustment. (SPM-01014)
		Addition of accessory.
		PDF registration.
	1994.09	SUPPLEMENT-2
	1994.05	SUPPLEMENT-1
	1994.02	New.